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Review

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Notes and explanation of symbols

The following symbols are used in tables in the *Review*:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank space in a table means that the item in question is not applicable.

A minus sign (-) indicates a deficit or decrease, unless otherwise specified.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or fiscal year, e.g., 1970/1971.

Use of a hyphen (-) between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.

References to "tons" mean metric tons, and to "dollars", United States dollars, unless otherwise stated.

Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates.

Individual figures and percentages in tables do not necessarily add up to the corresponding totals, because of rounding.

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Social images of modernization and technological change: two commentaries

In 1989 and 1990, the ECLAC Social Development Division carried out a study in five Latin American countries –Argentina, Bolivia, Brazil, Chile and Ecuador– on the social images of modernization and technological change. Six companies were selected in each country, taking care to include among them State enterprises, domestically-owned private companies and foreign-owned private companies. Care was also taken to ensure that the companies represented a range of economic activities: manufacturing, mining, agriculture, services and transport. In each company, interviews were held with the entrepreneurial side, an engineer or technician, and union leaders. As a result, it was possible to identify some items and aspects which may be of importance.

An analysis of the results of this study was published by the Social Development Division in January 1991 under the title “Imágenes sociales de la modernización y la transformación tecnológica” (LC/R.971).

This article presents the comments by Enzo Faletto and Carlos Filgueira on this study. The text of these comments is based on the presentations made by the two authors at a seminar on this subject organized by the Division from 25 to 27 March 1991.

Social images of technological change Enzo Faletto*

I. Innovation and styles of development

In the Latin American political and economic debate, there is general agreement that the main challenge facing the region is that of revitalizing its economic development in order to begin to overcome the adverse conditions which caused the 1980s to be termed “the lost decade”. This objective has to be pursued, however, at a time of profound world changes in which the great economic, social and political blocs which emerged after the Second World War have been completely re-defined and have evolved into other groupings –not yet fully defined but nevertheless possible to foresee in their broad lines– such as the Asian bloc, led

by Japan; the European bloc, which may possibly expand eastwards; and the North American bloc: Canada, the United States and Mexico, with the gradual selective incorporation of other Central American and South American countries. The biggest question marks hang over much of Africa, substantial areas of Asia –especially China and India, whose almost continental size must not be forgotten– and many of the Latin American countries. It must also be noted that, as most of the specialists point out, these blocs will not be built up as closed autonomous entities, but will be linked with each other and will tend to predominate over the others in certain production, financial or services functions.

This is not the appropriate place to refer to the current political changes, which are covered extensively in the daily press. What should be noted is

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that the geopolitical and geoeconomic changes which are taking place coincide with a process of profound technological change affecting the development of what used to be called the forces of production: that is to say, not only the means of production but also the social forms in which this is carried out.

Consequently, it would not be overbold to say that in one way or another the Latin American countries are virtually obliged to reformulate their development schemes. In order to do this, they must face up to the task of embarking on a broad process of changes in production patterns, within which there can be no doubt that technological change in its broadest sense –i.e., change in both the means and forms of production– is an indispensable requirement.

It has also been stated, however –for example, in the current ECLAC proposal– that the objective of changing production patterns must be accompanied by others, such as the achievement of greater social equity, since in this respect the region displays marked degrees of social inequality in comparative terms, outstanding features in this being the tendency towards the concentration of wealth and the exclusion of considerable sectors of the population. The ECLAC proposal also maintains that the process of changing production patterns must be accompanied by the consolidation of the democratization processes that are taking place in the region.

These objectives naturally give rise to a number of queries which call for dialogue and debate. One of these is directly linked with the objective of undertaking a broad process of change in production patterns. From the sociological standpoint, the problem is posed in terms of the verification of the social capacity for innovation; in this respect, Schumpeter's theories on the role of the entrepreneur as innovator immediately come to mind: a role which could be played by private or public entrepreneurs. It is also well known, however, that no matter how important the role of the entrepreneur may be in this field, innovation is not confined to entrepreneurs. Other social groups or agents also play a role in this respect: public figures, government agents, engineers and technicians, manual and non-manual workers, and many others. Moreover, innovation is not a process which is limited to the purely economic sphere, since political and cultural factors are of the great

importance in order for it to take place. Consequently, it is generally preferred now to talk about the systemic nature of innovation processes, emphasizing through the use of this term the fact that it is society as a whole which is the true agent of this process and that although the initiative of some particular group may give rise to a spurt of innovation, the full development of the process will depend on the conditions offered by the totality of the society in which it is taking place.

Consequently, innovation takes place in a historical and social context which makes it possible, conditions it or hinders it, and the determination of this context may be essential in order to understand the possibilities of the innovation process.

Naturally, if our main concern is with the Latin American countries, we cannot but acknowledge the big differences that exist among them, both in their economic structure and in their particular historical, political and social features. Some general features which call for special reflection are usually singled out, however. One of these is the well-known structural heterogeneity of the countries of the region. This is reflected in profound social differences which not only imply very different possibilities of access to the benefits of development but are also reflected in unequal possibilities of acquiring knowledge and obtaining the skills deriving from it. In this respect, the region has lengthy past experience: in spite of the undeniable achievements in certain fields, it has not been possible to overcome this heterogeneity, and in many cases it has even got worse. What, then, can be expected from the technological innovation process which is underway? Will it be possible to correct past experience, or will this heterogeneity be still further accentuated? What does the most recent experience in this respect indicate? The repercussions that such facts will have on the possibility of achieving the objectives of social equity and the full functioning of a democratic system are clearly evident.

An item which is closely linked with the foregoing is that of the extent to which the process of change is endogenous or exogenous. It is not just a question in this case of defending an urge for originality in the innovation process. The topic is a controversial one, and there has been quite longstanding controversy in this respect in Latin America (one of the most recent examples of this was the discussion on informatics in Brazil). Some more

general comments are called for on the endogenous or exogenous nature of innovations, however. It is well known that technology is normally designed in the light of the needs and demands of the society in which it originates, and these do not necessarily coincide with those of a different recipient society. This often leads to the introduction of still greater distortions in the structural and social heterogeneity already referred to, thus giving rise to a "modern sector" which satisfies the demands of the small population group in which wealth is concentrated but does not seek to meet the demands of the much more numerous but much poorer sectors. It will readily be understood that when the process is excessively exogenous, this further aggravates the dependence of our nations on the countries which act as the centre in these matters.

Another point of interest in the subject under discussion—different from the foregoing considerations in some respects but not unconnected with them, since to some extent it incorporates them—concerns important patterns of social conduct. It is well known that in the years following the Second World War the question of industrialization gave rise to an extensive debate in most of our countries, and it has even been said that whole new ideologies grew up with regard to this process. It would be interesting to know if something like an "ideology of technological change" is now taking shape, or rather, whether there are different ideological options with respect to it. If such options do exist, then the question arises of what their main elements are and what tendencies they stress; who the possible supporters of these options are, and what differences there are between them; what the points of conflict and consensus are, and what interests are reflected by the various actors in the process of technological change and the new modernization. The fact that such ideologies exist, although they may not be clearly defined, is the reason why the phenomenon in question may be viewed as a social process.

It should be stressed, however, that what is involved is largely a modernization process which is still underway and which, although it may not perhaps yet have reached the level of intensity attained in other parts of the world, is nevertheless significant. This modernization process naturally creates possibilities, but it also generates conflicts, which already exist to some extent. How will our societies behave in the presence of these possible conflicts?

There are some items which have a strong impact on the objectives of equity and democratization. If these objectives are to become a reality, they cannot be simply added on to the economic objectives. Their full validity will depend largely on their being incorporated into economic life itself, and there are naturally many difficulties standing in the way of this.

We live in societies where the masses are very prominent. Do these masses enjoy access to the knowledge and skills which will enable them to participate in tasks connected with the management of the economy and society, however? If not, then we are living in mass societies which are actually run by a relatively small élite.

The question therefore arises of whether the new technology—understood in the sense not only of new machines but also new forms of organization and management: in short, a new social division of labour—favours only a few, incorporating them in a highly positive manner but reducing the others to a passive role.

The existing literature on this subject shows that the new technology—whether instrumental or connected with organization and management—has not yet clearly defined its predominant orientation, but what does seem to be certain is that to a large extent everything will depend on the social use made of the technology. In other words: the so-called "scientific nature" of the new technology is emphasized, but this may mean in practice that the form of work may be imposed from outside on those who carry it out. It is the machine itself which incorporates within it the way of carrying out the work. The really important part, which requires creative capacity, is the programming of the machine. Who has the chance to do that programming, and who has not?

In many cases, the new technologies have meant that "know-how" is no longer a quality of those who do the work: reference has even been made to the "expropriation" of the worker's knowledge, which is now incorporated in the machine. What is at stake here is the cultural significance of labour: an item of extraordinary importance in shaping the social identity of groups and hence defining their role in society. Naturally the subjects of equity and democracy are closely related with the foregoing: if the masses have no chance to participate and are condemned to a passive role, this takes away all the substantive content of democ-

racy and means that equity –or the search for it– is determined only by the possibilities for gaining access to consumption.

It was noted earlier that equity and democracy are objectives which must be made a reality within economic life itself: in this respect it must be borne in mind that there is a well-defined institution where work usually takes place: namely, the enterprise. This is at once a technical system, an economic system and an administrative system. The enterprise combines functional organization with differentiation of spheres of authority. The foundation for all this is what is known as the social division of labour, and the most visible form which this assumes is the separation between an order and its execution. Consequently, from the sociological point of view the enterprise is also obviously a power system.

The new technologies –and above all the organizational technologies– affect the functioning of the enterprise as a system, so that what is involved today is not just a more efficient organizational model, but also forms of power, that is to say, forms and capacity of control over the technical, economic and administrative aspects of the enterprise. This affects both the definition of spheres of competence at the management level and the relations established between management, those responsible for supervising the execution of work, and manual and non-manual workers. Consequently, the new technologies redefine the levels of participation in the establishment of objectives and the determination of the means of attaining them. To put this in more traditional language: the new technology may lead to redefinition of the relations between capital and labour, with obvious repercussions on society as regards equity and democracy.

Naturally, not everything takes place at the level of the plant or enterprise. In the new social relations established, important roles are also played by legislation, definition of the role of the State, the entrepreneurs and the trade unions, and even the possible forms of ownership and its exercise.

It would be easy to go on at greater length with regard to various aspects of the repercussions of modernization and technological change, but it is sufficient at this point to stress that we are not talk-

ing about technological change in the narrow sense, but rather a type of change which has wide-ranging repercussions that raise the question of a global development strategy: to use the traditional terms employed by ECLAC, what we are dealing with are alternative styles of development.

II. Views and attitudes of the entrepreneurs¹

For almost all entrepreneurs –as one of them remarked– modernization is one of the facts of everyday life, so that it is more or less unavoidable. The fact that there may be opposition to it –not only in entrepreneurial circles but in society as a whole– is therefore probably merely the expression of a conservative mentality or the result of prejudice. It is necessary to place this view on record because, as we shall see, it influences entrepreneurial attitudes to trade unions or workers who may express critical views on the way in which “modernization” is taking place.

Entrepreneurs identify themselves with the modernization process and often define themselves as “men with a mission of change”. In the process of innovation, of which they consider themselves to be important agents, they display two fundamental features: the capacity to break with present practices and the capacity to adapt to what is taking place in the outside world. In other words, it is a question of casting aside traditional ways and, implicitly, assuming that the model of modernity is already in place in the countries which they consider to be most highly developed.

With regard to the possible impact of modernization on society as a whole, they believe that the new technologies will raise the general standard of living, which they ascribe to increased productivity and efficiency. It is interesting to note that two items which are objectives at the enterprise level –productivity and efficiency– are also considered important elements in what might be called the success of society itself.

Entrepreneurs say that they need certain global conditions in order to be able to take the right deci-

¹The term “entrepreneur” is used here in a very broad sense. It is not restricted to the owner of the enterprise, but includes the upper-level management too.

sions on technological investment. They consider the political and economic stability of the country to be primordial in this respect, since they seek factors of security which will guarantee their investments. They also consider that a climate of growth is necessary, since in its absence there would be limits on the possible development of the enterprise. They also think that in the absence of economic growth technological innovation could even have negative effects by causing unemployment among those workers not absorbed by expansion of the economy. It could therefore be said that there are three fundamental conditions which entrepreneurs consider to be necessary for promoting technological development and modernization: stability, growth, and a guarantee of relative security for investments.

There is another factor which is perhaps the most important of all in the search for technological innovation by entrepreneurs, however. They feel that if they do not modernize their activities they will not be able to compete in the market, especially the external market to which most of them aspire. This widespread desire to establish links with the external market influences the type of technological development chosen in various ways. Entrepreneurs believe that in the external market the patterns are already defined and that the technology to be used is to some extent already imposed by a system of international production which has already fixed the patterns for the various processes. They therefore see the possibilities for domestic technological development as being very limited.

They also consider that incorporation into the external market obliges them to pay great attention to the quality of their products, and that this quality can be ensured through the new technologies. Most of them have doubts about the possibility of developing their own technologies: in the words of one of them, "it's no use trying to reinvent the wheel". What they are looking for are ways to secure good forms of transfer of new technology, while making the best possible use of existing techniques. These views lead them to attach great importance to association with foreign firms or enterprises, since they consider that the most important contribution by the latter is precisely their technological capacity.

Likewise, entrepreneurs are not very optimistic either about the possibility of developing scientific

and technological research within their own countries. In many cases, they justify this view by referring to the shaky economic condition of the country or the lack of sufficient capital to cover the heavy investments which they say would be required in order to implement an autonomous technological research policy. They also tend to consider that the research itself—such as that carried out in the universities—would be of an abstract nature and therefore of little practical use.

If we look at the image that entrepreneurs have of the various agents taking part in the process of modernization and technological innovation—such as the role of the State *vis-à-vis* private enterprise—we see that there is not in fact a single "entrepreneurial ideology" on this topic, as may sometimes have been assumed. This is partly due, of course, to the fact that in this study we also consulted public entrepreneurs, but in fact the diversity of views goes beyond this factor. Quite often, one and the same entrepreneur expresses favourable views on State action in some aspects and favourable opinions on the action of private enterprise in others. The tasks which entrepreneurs feel should be carried out by the State are mainly those of promoting development, creating infrastructure, and to some extent defining development strategies and priorities.

The above image should be contrasted with the idea that many entrepreneurs have of their option as entrepreneurs in the field of technology. As already noted, they feel that the most viable course is the adoption of existing technology, and although they do not deny the possibility that a global technological development policy may be justified, they consider that such development is the responsibility of the State and not of the business world. With regard to the question of State action, it may be said that entrepreneurs try as far as possible to separate the spheres of competence of the enterprise and the State.

With regard to the image of the various agents connected with the innovation process within the enterprise, it is interesting to note the image that entrepreneurs have of themselves in respect of these items. Quite often, they mention the persistence of traditional approaches among entrepreneurs as a whole and contrast this with the need to seek greater technical competence and efficiency. They consider that the main responsibility of entrepreneurs is to ensure the success of their enter-

prises, and that achieving such success is also a social responsibility.

They believe that the new technologies spread much more than just information, in that they change the forms of management and call for greater participation, but they strongly demand, as a basic attribute of entrepreneurs, the right to take their own decisions, especially with regard to investments and the orientation of the enterprise's activity.

With regard to engineers and technicians, the entrepreneurs consider that these specialists will be increasingly important in the enterprise as a whole as technological development advances, and that the role they currently play is almost that of promoters of the new technologies. Because of this, they believe that changes could take place in the structure of command, meaning a redefinition of the current forms of authority.

With regard to the workers, the entrepreneurs generally consider that the new technologies operate in their favour by reducing the need for physical effort and offering them the possibility of gaining new skills. With regard to the latter topic, most entrepreneurs are in favour of the diversification of jobs rather than restriction to a single task, and they consider that the new technologies both require and permit this. They also believe that in the immediate future one of the most important groups within the enterprise will be that of the technically skilled workers.

The entrepreneurs insist that the aim of introducing new technologies is not to eliminate the need for labour, but to improve the quality of production. They acknowledge that there may be problems with the older workers whose traditional skills may become obsolete, and for this reason many entrepreneurs see a close relationship between technological renewal and renewal of the labour force, although of course they do not rule out the possibility of retraining. Once again, however, the problem is with the older workers, whose skills, they feel, are more fossilized.

The entrepreneurs see their biggest problems in their relations with the trade unions. The most controversial issue is that of the degree of control that the trade unions can exert on the labour market. They are fully aware that most of the problems in the area in question derive from the trade unions' fears that the new technology will be used to save labour.

The entrepreneurs' preferences are for a type of trade union of a primarily professional nature. They would like the discussions with the unions on the subject of "modernization" to be kept on a strictly technical level. As in the case of the functions of the State, the entrepreneurs also try to determine clearly what they feel should be the entrepreneurial function and what should be that of the unions, and they reserve for themselves the right to take decisions on the running of the enterprise. Their views could be summed up in the words of one of the entrepreneurs interviewed: "in an organization or enterprise there are different estates or functional groups with different functions which are perfectly well known. Once this is accepted we can begin to talk".

III. The images held by engineers and technicians

Engineers and technicians define themselves as possessors of knowledge: in their view, it is they—almost by definition—who have the necessary technical knowledge. In the interviews it was clear that they feel real enthusiasm for the new technologies, although differences were sometimes observed, especially between those directly connected with production and those connected rather with service activities. Among the former, the attraction of novelty is very strong, but among those carrying out service functions there is sometimes a feeling that the new machines are taking over functions which previously belonged to them, especially in the case of the taking of certain decisions (as for example the taking of decisions on discounts, collection and transactions in the banking sector). In almost all cases, however, whatever the activity involved, there is a high degree of identification with their work as engineers or technicians, and they feel to some extent responsible for the functioning of the whole system.

In the light of this positive image of their own role, some of those interviewed referred to the structure of authority in the enterprise, especially when that structure is of an excessively vertical nature, indicating the need for greater participation in decisions, which they considered to be justified by their special mastery of the technological aspects.

It is interesting to note that some of them –not necessarily the majority– consider that this enthusiasm for technology, which they see as a generalized feature of modern society and not just of their own group, may in certain respects be a source of distortion. These technicians feel that the advances made or the systems and methods introduced are not in keeping with the environment and therefore generate poles of development which benefit certain minorities. Those who hold this view consider that the present manner of training engineers and technicians has a technocratic slant biased towards individualism and the paramount importance of efficiency, and that it lacks a suitable social component.

The image they have of the technological development process currently underway tends to be a positive one. Many of them even feel a certain compulsion to incorporate themselves into the existing technological development, and a phrase which is frequently used is the need “not to remain behind”.

The model of the most highly developed countries seems to them almost inevitable, and they consider that it must be followed. It should be noted, however, that they draw a certain distinction between the acceptance of technology as an instrument and the objectives to be attained through it. Thus, their objectives often include certain notions of national development, especially that of achieving “national production”.

These ideas are more typical of those engineers and technicians who have a certain image of “public service” in their work, regardless of whether they are employed in the public or private sector. Others, however, only see modernization from the more limited viewpoint of a single enterprise.

When their ambition is that modernization should assume a more global character, they propose that an objective of this type should be formulated at the institutional level. The idea of the social function of certain activities is an important element which justifies an active role by the State, in the eyes of those who hold this view. Thus, they consider that the State should promote technological development by encouraging research, science and general education and should even take concrete economic actions to this end. It is therefore

not surprising that many hold the view that the State should exercise a global planning function.

With regard to the role they assign to the entrepreneurs, they feel that an important element in entrepreneurial functions is the incorporation of innovations, breaking with traditional forms of behaviour, and the formation of an “enterprise culture”. They often feel that the enterprise should fulfil an economic function in terms of national objectives, however. In the real forms of conduct which are most frequent today, they see the predominance of a strictly economic attitude and an individualistic approach. Even so, however, most of them believe that the power to make decisions is a basic function of the entrepreneur.

With regard to the endogenous or exogenous nature of technology, they take it for granted that most of it is exogenous and that in practice there is considerable dependence on suppliers, but at the same time, the idea of seeking self-sufficiency in this respect seems to them to be out of date and not justified in terms of costs and benefits. Autonomous technological development seems to them to be very difficult to attain, and they note that this is at least partly due to certain domestic shortcomings of our countries, including the weakness of private enterprises, the absence of incentives for research at both the global level and within the enterprises themselves, and even a relative lack of interest on the part of engineers and technicians. Nevertheless, they believe that an effort should be made in this direction, and they consider it desirable to establish a national technological development programme and develop the capacity of the universities in this field.

With regard to the significance of technological development at the enterprise level, they coincide with the entrepreneurs in emphasizing the objectives of competitiveness and productivity.

As far as the relationship between the new technology and the labour force is concerned, they consider that the workers of our countries have some good qualities, such as adaptability and even a certain capacity for innovation. They feel, however, that the workers often do not have much motivation for entering enthusiastically into the process of modernization and technological innovation. They are conscious that the workers do not influence the decisions on the use of new

technologies, and that generally they have very little participation in these matters.

With regard to the effects that the use of new technologies could have on the labour force, they feel that these technologies are favourable to the workers, pointing in particular to the possibility of gaining new skills. They see some resistance among the older workers, but they consider that generally such resistance is due to lack of information and to the fact that the workers are not appropriately compensated in line with the benefits that technological modernization brings to the entrepreneur.

As already noted, most of the engineers and technicians have a very favourable attitude to technological modernization, but in service activities or activities which are not directly concerned with production, such as in banking, the technicians noted that there is a tendency to bring down the level of skills of the staff and that they are replaced in their functions by machines such as cash dispensers.

As far as the problem of employment is concerned, some of them feel that with the new technologies there are actually greater possibilities of growth and hence of absorption of unemployed workers, but others consider that unemployment is almost inevitable as a result of the use of the new technologies and that the only way out is to seek some other form of compensation.

With regard to their views on the trade unions, they consider these to be valid instruments but tend to disagree with the specific ways in which they carry out their activities. They have particular misgivings about the question of politics in the trade unions, and most of them would prefer to see the unions operating on a purely professional and corporative level. They hold this view both with respect to unions for manual workers and their own trade union organizations, if these exist. Some of those interviewed, however, consider that the process of modernization will bring with it a certain degree of participation by the trade unions in the more global issues of the enterprise, so that their function will not be limited only to immediate demands. However, they consider that the manual workers' trade unions are not currently equipped to engage in discussions in the technological area.

IV. The views of trade union leaders

It was among the trade union leaders of the enterprises surveyed that the greatest doubts regarding the new technologies were expressed. The crux of their attitude is that they contrast their social position as a workers' group with what has been called "modernity". As a trade union leader pithily said: "yes, we are trendy, but we are not modern". The problem, for many of them, is the way the possible benefits of technological development are distributed. Some of them consider that technological development, as it is currently taking place, is reflected mainly in an increase in the power of those groups which already possess it.

With regard to the effects of the new technologies on the labour force, the union leaders point to the existence of a high degree of instability due to a constant process of change; the tendency towards reduction of the manual labour force; and the fact that although less physical effort is required (which is considered a positive aspect) other kinds of occupational health problems have arisen. The fear of unemployment due to technological change is a recurrent theme mentioned in almost all the interviews.

It is important to note that all those interviewed usually expressed both positive and negative views on the new technologies. Among the advantages, it is noted that these technologies give rise to a certain amount of interest among workers in improving their skills, which is considered positive, and it is likewise mentioned that they give rise to an interest in assuming new responsibilities, while it is also considered that in some cases they make it possible to use new forms of knowledge which open up fresh work prospects. Among the disadvantages, reference is made to the tendency towards a heavier workload in terms of speed, pressure and other similar aspects; an increase in the workers' responsibility, because they are using very expensive equipment, and—in almost all interviews—the existence of new occupational diseases.

In many cases, positive views of the new technologies expressed by union leaders are connected with some degree of identification with the objectives of the company, such as achieving higher quality. They often note that the technologies allow the workers to be more efficient, which is not the case when old and outdated machinery is used.

With regard to the question of skills, they also express both positive and negative views, such as the idea that unless workers are given a chance to take part in the programming of machinery, the use of a programmed machine may turn them into mere button-pushers. Many workers have an image of loss of skills: one of them expressed this in the words: "it's true that there is less effort, but what kind of a job is this?"

With regard to the new forms of organization of labour, they express various critical opinions. They frequently refer to the breakdown in the exchange of knowledge and experience among workers in the course of their daily work. Naturally, in these attitudes there are differences which depend on the real degree of incorporation of the workers into the new technologies (for example, those who have already been incorporated into them have a certain feeling of privilege compared with those who are not in this position). In direct relation with the foregoing, there is a very widespread idea that a significant separation is taking place between those who have access to the new skills and those who are losing their skills. This loss of skills may even take place in occupations which were previously considered highly skilled, such as turners and toolmakers.

In view of the foregoing, it is very important to union leaders that new patterns of skills should be worked out in line with the new technologies. Likewise, they emphasize that there is a big demand for training, and they demand greater access to knowledge. It is not only a question of knowing how to do something, they say, but rather of knowing why one is doing it. The most generally held opinion among labour leaders interviewed is that most of the enterprises or other institutions do not have suitable training facilities which allow workers to face up to technological change in a positive manner.

The foregoing does not mean that they reject the new technology, however, but rather that they have a clear image in their minds of what the technology should be. What the trade union leaders interviewed wanted is that technology should be oriented towards society—that it should play a leading part in improving education, medicine, transport, etc.—and they also want the power given by technology to be democratized. This attitude may be influenced by the fact that those

interviewed were trade union leaders, but at all events it is interesting to note that it exists.

Naturally, there are also more specific demands connected with the sphere of the enterprise itself, including participation in the benefits of the increased productivity that the new technologies can bring, security of employment, and a higher degree of humanization of work through the new technologies. The question of working conditions is considered to be of the greatest importance.

The majority of the trade union leaders tend to be critical of the way they feel technology has been handled by the entrepreneurs. They consider that the latter have concentrated the modernization process in their own hands and the workers have been left on the sidelines of the decisions taken. They take the view that the benefits of modernization are favouring almost exclusively the entrepreneurs, and they do not see any real modernization of labour relations. Specifically, they perceive that there is great interest on the part of the entrepreneurs in improving technology, but not in modernizing labour relations.

They are also conscious of some shortcomings on their own side, however, and they therefore want more training on this issue and its implications, both for workers and for union leaders themselves, for which purpose it is necessary that the latter should change their traditional form of behaviour and try, for example, as some of them suggest, to participate in the formulation of a national technology policy.

They consider that the issue of technology has been absent from the discussions at the grass-roots trade union level, and they note that the precarious economic situation of the workers makes it more difficult to arouse interest in this issue, since it does not seem so important to them as that of wages.

Finally, it should be noted that most of the trade union leaders interviewed assign considerable importance to the role of the State in these matters: they consider that it should guarantee the fulfillment of national objectives in the formulation of a development policy, and they perceive that State action could ensure better distribution of the benefits of technological development. For this reason, the preferred image they have of the latter is that of endogenous technological development in which global interests predominate.

V. Some general observations

By its very nature, the study carried out does not allow of definitive conclusions, but it is not unreasonable to highlight some of the features emerging from it. Both among entrepreneurs and among engineers and technicians, there is a certain identification with the technological change underway, which is taken as an indicator of the degree of modernization of society.

Thus, both entrepreneurs and engineers and technicians feel identified with the process. The former consider themselves to be agents of such change, because through their economic function they are helping to modernize society, while the latter tend to consider that they are among the main personalities of the "new society" because of the type of knowledge they possess. In contrast, trade union leaders –although not rejecting modernization and technological change– express greater doubts about the specific form these developments are taking.

In their views on modernization and technological change, the entrepreneurs predominantly take an attitude which could be called "enterprise-oriented". The same attitude is also found among engineers and technicians, although they quite often express more global views, such as the need for national technological development aimed at objectives of this nature. The views of trade union leaders, for their part, are often conditioned by the potential that technology may have for satisfying certain broad social demands and improving living conditions, while they are also naturally strongly influenced by the fear of adverse effects such as possible unemployment, the loss of acquired skills, deterioration of working conditions, etc.

The incorporation of new technologies is considered to be an absolute necessity by entrepreneurs, since they see in it a way of increasing their competitiveness, especially if they are thinking of entering the external market. Achieving greater efficiency, higher quality and more competitiveness in the enterprises is also prominent among the views of engineers and technicians. For many trade union leaders, however, the acceptance of these objectives is strongly dependent upon the possibility of sharing in the benefits obtained by the enterprise.

The idea of advancing towards modernity, which also means entering the international market, causes entrepreneurs to have many doubts about the possibilities of promoting technological development of an endogenous nature. As well as pointing to domestic difficulties in doing this, they feel that the model has already been set and that true technological development takes place above all in the central countries. Engineers and technicians also see the incorporation of the advances made in the more highly developed countries as inevitable, but they have greater expectations with regard to the possibilities for domestic technological development. Among trade union leaders, the idea that technological development should be more closely adapted to national conditions is more widely held.

To a certain extent, the topic of the role of the State is conditioned by the foregoing: trade union leaders tend to see in the State a possibility for ensuring that technological development satisfies their social demands of a general nature (living standards) or of a more specific character (employment, training, etc.). In some cases, engineers and technicians feel that the State should play a more forceful role in planning and promoting technological development aimed at national development objectives. The entrepreneurs, in contrast, are interested rather in defining the respective areas of competence of the State and private enterprise in this field.

There is also an awareness that the new technologies will to some extent affect the traditional forms of definition of functions within the enterprise. In this respect, engineers and technicians call for greater decision-making capacity on matters where they feel that they are particularly well fitted to intervene because of their special knowledge. The entrepreneurs recognize that changes will take place in the decision-making structure, but they reserve for themselves the right to take the decisions on investment, including investment in the technological field. The trade unions consider that they are generally not taken into account in decisions on the incorporation of technology, and they demand greater participation in this respect, at least in matters that may directly affect them.

The trade unions are much more sensitive to the possible adverse effects of the use of new tech-

nologies, such as new occupational diseases, loss of skills, unemployment and heavier workloads. In contrast, the entrepreneurs and also many engineers and technicians generally tend to take the view that the problems which arise are connected rather with the adaptability of the workers.

The possibility of these issues being tackled jointly by the three sectors –entrepreneurs, engin-

eers and technicians, and workers– is strongly conditioned by the attitude of the former to the trade unions. The biggest problem is the reluctance of the entrepreneurs, and also of many engineers and technicians, to accept that the functions of the trade unions are not purely professional and that they must necessarily include in their demands matters which are not strictly of a technical nature.

Attitudes to technical change

*Carlos Filgueira**

The main queries raised by the study commented upon here may be summed up as a common concern: that of determining if the incorporation of the countries of the region into the current processes of technological change favours the reversal of a long-standing pattern of development characterized by marked inequity, or if on the other hand it may help to strengthen it still further. This concern is reflected at various levels of economic and social, cultural and political life.

The study examines one of the issues which causes most controversies at present: whether technological change, which is needed in order to further the international competitiveness of enterprises and countries, can be made compatible with equitable social development and the political stability of pluralistic regimes. The possibility that the region may run the risk of repeating past experiences in the face of a new orientation or division of labour brought about by technical change which accentuates social segmentation or structural dualism is one of the main questions raised.

Other questions arise on the cultural level itself and concern the effects of the new technology on the cultural significance of labour (loss of a sense of individuality in one's work, or the new multi-purpose nature of the worker), the way their influence is felt on the traditional shared identities, and their repercussions on the forms and content of the action of the collective actors. Consequently, the question arises of how the culture of workers, entrepreneurs, and of the intermediate groups of

technicians and professionals will be redefined. At the enterprise level, the effects of technical change will undoubtedly affect the organization and structure of power and the degree and type of participation by the workers; this therefore raises the question of the extent to which the gradual separation between orders and their execution brought about by the appropriation and concentration of new knowledge could give rise to a loss of autonomy, significance and control with regard to labour. Finally, the question also arises of how micro-social processes are transferred to the macro-social level and the effects on development deriving from the accumulation and combination of responses to direct impacts on labour.

In the study under consideration, a number of conclusions are drawn from the features of the new technical and economic model which has been taking shape in the developed countries. Some of the central questions raised in this respect concern the conditions for the application of this model in the countries of the region, since it imposes certain requirements (a new form of global regulation, a new "common sense" shared by the main actors, the reorganization of the system of production enterprises, etc.) which do not correspond to the features of the "typical" enterprises and entrepreneurs nor the behaviour and ideologies of the other collective actors of the region. In particular, mention is made of the new role that the trade unions have played in the face of this "new model" in so far as their action is not merely one of support for or resistance to the new technologies: what is involved is the limiting role that they can play through their capacity for obstruction (regulations

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on dismissals, new standards for job classification, or new union demands, especially wage demands associated with increased productivity and reduction of working hours).

Finally, various socio-political requirements of the "new model" are explicitly stated. Among them, the most important in my view is the need for agreement on fundamentals among the main individual and collective actors. In the countries in question, this agreement was possible thanks to a long tradition of negotiation and concertation between the State, entrepreneurs and the trade unions, or else the full sway of neo-corporatist political systems.

I. Social images of technological change

In this section I shall try to summarize and comment upon the main results of the interviews analysed in the study under discussion. As the sources are secondary—they come from various studies carried out by other authors—and moreover the universe of units does not claim to be representative, the analysis of the interviews must be adjusted to what the procedures followed allow. The presentation adopted in the study under analysis comprises a set of main topics which make it possible to compare and contrast the social images held by entrepreneurs, technicians and professionals, and union leaders. In table 1, I have tried to establish a simplified summary matrix of the images on 14 topics.

As this is a methodology which is usually called qualitative, I have decided to use some simple signs in the table to represent favourable views (+), unfavourable views (-) and seriously divided views (+-). In order to distinguish certain shades of opinion, totally favourable or unfavourable views are indicated with a double sign (++ or -- respectively). When there is one predominant view and another which is relatively marginal, the latter is given in parentheses.

II. A general approach

In principle, the pattern of the social images held by the three types of agents interviewed shows clear polarization between the societal images of entrepreneurs and those of trade union leaders. As a rule, the views of the intermediate sector of tech-

nicians and professionals are midway between the other two groups, although they show greater affinity with those of the entrepreneurs; only in a few cases are they closer to the views of trade union leaders.

The images held by entrepreneurs are totally positive in respect of i) technological change, ii) its effects on the workers, and iii) its consequences on labour relations.¹ They have a favourable view with regard to the productive and societal function of the enterprise and the advantages of training as reflected in the performance of the workers.

In contrast, their views are sharply negative with regard to the participation of workers in the management of the enterprise—except in the case of limited participation in collective management units covering their specific tasks or in working groups—and also negative regarding endogenous technological modernization. The tendency which they display to have greater confidence in imported technology, together with their view that there is only limited potential for mobilizing domestic research and development resources, confirm the findings of other researchers (Argenti, Filgueira and Sutz, 1988), whose studies emphasize the lack of demand stimuli and the limited interchange between research and production.

With regard to the other items, in general the replies reflect divided views.

It may be stated, in short, that the entrepreneurs interviewed display general optimism with regard to both technological change itself and its effects on the working environment and society as a whole, and they consequently also have a high opinion of the function of entrepreneurs. On the other hand, entrepreneurs do not seem to be willing to entertain new forms of co-participation (or co-management) by the workers in the technological management of the enterprise, although some modern entrepreneurs did show a certain willingness to increase the level of information on the performance of the enterprise (an item considered to be secret by the others), and there are some "social innovation" initiatives in this respect.

¹ The positive view regarding the consequences on labour relations is influenced by the greater weight of the replies by Brazilian entrepreneurs. In some cases, Chilean and Argentine entrepreneurs reported serious labour conflicts; these results were probably influenced by the characteristics of the labour force in these two countries (more traditional, older, and with its own subculture) and its trade union organization and tradition, which is also related with other political actors such as political parties and the State bureaucracy.

Table 1

**ENTREPRENEURS, TECHNICIANS AND PROFESSIONALS AND TRADE UNION LEADERS:
VIEWS ON 14 TOPICS^a**

	Entre- preneurs	Technicians and professionals	Trade union leaders
1. Technological modernization	+ +	+	+ -
2. Endogenous technological modernization	-	+ -	+
3. Role of the State	+ -	+	+ +
4. Function of the enterprise and the entrepreneur	+	+	-
5. Motivations of entrepreneurs	+ -	+ -	-
6. Impact on workers	+ +	+ +	- (+)
7. Labour relations	+ +	+	- -
8. Participation of workers	- -	- (+)	+ +
9. Training	+	+	+ +
10. Views of entrepreneurs on technicians and professionals	+ -		
11. Views of technicians and professionals on entrepreneurs		+ -	
12. Views of trade unions on entrepreneurs			- -
13. Views of trade unions on technicians and professionals			+ -
14. Views of entrepreneurs on workers	+ (-)		

^a + = favourable views; - = unfavourable views; +- = sharply divided views; ++ = totally favourable views; -- = totally unfavourable views. In cases where there was one predominant view and another relatively marginal one, the latter is given in parentheses.

If these views of a small and not necessarily representative group of entrepreneurs were valid for describing the dominant attitudes in the whole region, then the contrast between an attitude fully favourable to "technological innovation" and another attitude of resistance to "social innovation" could indicate one of the characteristic features of "conservative modernization".

The pattern of the social images held by trade union leaders is in marked contrast with that of the entrepreneurs in some areas of particular importance. It would not be overbold to say that there seem to be certain leanings of an antiliberal and anticapitalist nature behind the views of these leaders: strong aspirations for full State intervention, resistance to the functions and motivations of the enterprise and the entrepreneur, and a predominantly negative view of the effects produced on the workers by the introduction of new technologies. The only country where the views of trade union leaders were more favourable to entrepreneurs was Chile, and in this respect this country is probably a lone exception to the Latin American rule.²

² These features were noted in CEDEAL/FLACSO/CEDES/CIESU, 1988. This study also showed that in Chile the population as a whole—not only the trade unions—took a view of the entrepreneurs which was in clear contrast with those held in Uruguay and Argentina.

With regard to the positive images held by trade union leaders, they take a strongly favourable view of worker participation in the technological management of the enterprise and of better training for their work. In the first case, this represents an extreme contrast with the views of entrepreneurs, but in the second instance this represents an interesting point of consensus which could serve as the basis for future policies designed to encourage this type of activity. Finally, trade union leaders are the only agents interviewed who were markedly favourable to endogenous technological modernization.

The images held by middle-level staff (technicians and professionals), as already noted, reflect a kind of "middle ground", albeit closer to the views of the entrepreneurs than to those of the trade unions. Generally speaking, most of the items viewed in a positive or negative manner by the entrepreneurs were seen in a similar light by technicians and professionals, although not as strongly. It is not surprising that technicians and professionals differ from the entrepreneurs precisely in their views on the need to promote endogenous change, in which their position is closer to that of the trade unions. The same is true with regard to their

attitude to the functions to be assigned to the State and the participation of workers in technological management.

III. The nature of the different images

The entrepreneurs believe implicitly in an "unquestionable modernity" which they consider as one of the basic facts of life. Some of their views may be more enthusiastic or more critical than others, but the predominant assumption is that an irreversible cultural change is underway. In the final analysis, they see its consequences as beneficial both for the enterprise and for society as a whole.

At all events, the main concern of the entrepreneurs is the certainty or uncertainty of the profitability of investment in new technology, the response of the market, and the continuity of public policies.

In contrast, the trade union leaders see modernity as a doubtful development which gives rise to fears among the workers. They recognize that it is inevitable and may be beneficial—perhaps as the lesser of two evils— but analysis of the document shows a clear division between the abstract world of technological modernization and its possible benefits and the concrete consequences which it is likely to have on the daily life or more recent work history of each worker.

On this point, the trade union leaders coincide with entrepreneurs regarding the inevitability of change, but—to use a classical concept of sociology—they see it as a new situation which is severely detrimental to existing structures and gives rise to "anomy", that is to say, the loss of validity of a system of rules (anomy in the original sense as coined by Durkheim, or similar to Seeman's notion of "alienation").

I think that the best way of grasping this sense of anomy is to see it in its dual quality of i) a cultural conflict which puts the worker in a position where he is torn between the well-regulated world consistent with his early socialization, his reference groups and shared identities, and another world governed by a new system imposed from outside which breaks with the time horizons of individual orientation; and ii) a generalized feeling of "not belonging", loss of control, loss of meaning, and above all lack of group references

through which he can project and confirm his personal identity.

The subjective insecurity deriving from the new conditions imposed by the changes in work (employment, wages, labour relations, etc.) gives rise in practice to a common syndrome similar to that caused by other situations of the collapse of personal structures which have been analysed in the sociological literature (migration, economic crisis, disintegration of the family, etc.).

For technicians and professionals, in contrast, technological change and the growing content of knowledge which it involves mean the raising and enhancement of their role as well as of their prestige and power in the organization.

Even so, their favourable views are subject to a number of reservations caused by various conflicts which derive precisely from this feature, especially because of the gap between the mutual expectations of entrepreneurs and technicians and professionals with regard to their power attributions within the organization. This topic of the conflicts that arise with regard to the place of technicians—or technocrats—in complex organizations is also a traditional field of sociological research.

In so far as knowledge becomes increasingly a power in itself, the tension between entrepreneurs and technocrats over the different sources of power becomes one of the main areas of conflict within the enterprise. The settlement of this tension affects such crucial aspects as the identification of professionals with the enterprise, their commitment and loyalty, their productivity and efficiency, and ultimately the success of innovative management of the enterprise.

In recent publications, mention has been made of certain kinds of "new" production enterprises, generally small but successful, which have been set up by professionals and technicians with the initial aim of pursuing teaching or research activities. Their success is generally attributed to the accumulation of know-how from another source and its application to production activity. Little attention has been paid, however, to the fact that these enterprises are virtually free of the tensions referred to.

Nevertheless, generally speaking the views of technicians and professionals coincide with those of entrepreneurs, and they do not suffer from the insecurity over the possible loss of employment expressed by workers.

Even in their most pessimistic views, entrepreneurs and middle-level staff tend to see technological modernization as a challenge but not as an externality imposed from outside.

These are, briefly, the different views held on technological modernization. Each of the groups in question has something like a "statement of position" subjectively evaluated in line with the place occupied in the new process.

With regard to the other topics included in the matrix, the views of the three groups which were interviewed may be examined in the light of this "statement of position", the longer-term trends of the interests of each group, and their cultural patterns. I think that within these more general interests and cultural patterns, this statement of position is the key element which makes it possible to understand the different positions assumed with respect to the new conditions deriving from technological change. It even makes it possible to understand the differences which exist behind certain apparent agreements shown by the matrix. Thus, for example, certain entrepreneurs and trade union leaders take a positive view of the role of the State. For these entrepreneurs, however, the importance of the State's role lies in the organization of the economy, the stimulation, planning and financing of research, and the coordination of the scientific and technological system. For others, the function of the State is to promote competition and ensure the free play of market forces.

The trade union leaders, however, see the function of the State as one of active intervention in the general guidance of the economy and stimulation of research, since they feel that this cannot be left to the initiative of the entrepreneurs and that the redistributive effects of technological change must be taken into account.

These contrasts between and within the groups in question are also reflected in their images regarding the motivation of the enterprise and the entrepreneur. Entrepreneurs point to considerations of an economic and productive nature (opening up to the external market, need to improve product quality, competitiveness, limitations of the domestic market). The trade union leaders, in contrast, point to the lack of a "social responsibility" on the part of the enterprise, traditional speculative forms of behaviour, dependence on State support, and, in the case of innovative enterprises, unequal distribution of the benefits derived from higher pro-

ductivity and the monopoly of the knowledge corresponding to a new "modern culture", from which they feel that they are excluded.

The comments could also be extended to other topics set forth in table 1, but this would merely mean repeating many of the considerations already set forth.

It must be borne in mind that social images are only one of many manifestations of the tensions which exist within the enterprise or within society as a whole. Analysis of them is not enough to permit the determination of the true level of real or potential conflict in the area studied, and this is not only because we are dealing with a very special "sample" of interviewees which naturally limits the scope of the conclusions.

The main problem lies in the fact that social images, or representations and attitudes, are not necessarily reflected in corresponding behaviour. The real tensions in the enterprise or in labour matters are modified by the behaviour of the collective actors (the trade unions, trade associations, the State) and by the systems of "representation of interests" of each particular political system. The trade union traditions (more or less ideological, bureaucratic or corporative); the relations between trade unions and political parties; the entrepreneurial ideologies (traditional, modern, neoliberal) and above all the presence or absence of institutional mechanisms for settling conflicts (such as the existence or absence of facilities for negotiation among corporative interests and the role of the State in negotiations), make up the frame of reference within which the social images must be considered.

From what we have seen so far, the representations of the three groups in question, and above all those of entrepreneurs and trade union leaders, differ so much that sometimes it would seem that those interviewed are not talking about the same phenomenon. Among the entrepreneurs, there is a predominantly optimistic view of technological modernization; they do not see any problems in its effects on the organization of labour and the position of workers (except for some mention of minor unemployment of a temporary or frictional nature, or the time needed to adapt to the new system); they do not expect more labour conflicts; they are not willing to try out any form of co-participation or co-management of the enterprise, and they take a positive view of the type of

management and functions carried out by entrepreneurs.³ They also demand that the State should provide the economic and management conditions needed to ensure the profitability of investment in new technologies.

Trade union leaders, and to a lesser extent technicians and professionals, take a different view which, in the case of the former, is clearly contrary to that of the entrepreneurs, since they expect the State to act as a guarantor of the "social responsibilities" of technological change, demand participation in the management of the enterprise, and question the basic motivation of the entrepreneurs.

There are two particularly important points which arise from these respective definitions of situations: on the one hand, the repercussions they have both on the tensions and conflicts within the enterprise and in the more general area of labour matters, and on the other hand their cumulative effects on the levels of equality and social equity.

If the other factors remain unchanged, the social images in question suggest a special form of insertion of the workers in the process of technological change of the enterprise. To use classical Weberian terms, this represents "negative integration" into the system. To put it in more general terms, this occurs when a social group or sector which has some degree of power forms part of a system of collective actors but tends to exercise its power rather in the form of a veto, obstruction or resistance. This "negative integration" particularly affects the efficiency of a given system of actors in achieving the sought-for objectives.

Such "negative integration" is probably not a new phenomenon, at least if the tradition of labour conflicts and definition of the actors, especially of the trade unions, has traditionally been in line with this pattern. There can be no doubt, however, that technological change may form a new element which either strengthens this form of integration or, on the contrary, provides an opportunity to reverse it.

³It is significant that, in spite of this general tendency, some entrepreneurs do mention the advantages of certain practices of giving general information to the workers on the performance of the enterprise and its operating results, especially with regard to production and markets, which leads to the reduction of conflicts or to more flexible mechanisms for settling them. Generally speaking, as pointed out in the study under analysis, the firms which adopt these practices are transnational corporations and not local enterprises.

"Negative integration" at the level of the social images is not necessarily associated with a lack of institutional machinery for channeling conflicts, but there generally is such an association, however, so that "negative integration" reflects not only attitudes or feelings of "not belonging", but also the lack of effective institutional facilities for expressing interests or for the mutual recognition of these in specific negotiation and concertation bodies.

It is interesting to note that it is in fact certain trade union leaders (from Argentina) who think that the reduction of labour conflicts depends more on the participation of the workers in the process of technological change than on other factors. The group of "modern" entrepreneurs also attach importance to the redefinition of the rules governing labour relations in order to ensure the success of technological change, but it is not possible to distinguish how these views—or views to the contrary—are associated with the modernization characteristics of the enterprise to which those interviewed belong.

With regard to the second point, however, the aggregate consequences of technological change and its effects on the more or less regressive distribution of social assets are different. There are at least three aspects on which the views perceiving growing inequity at the aggregate level are centered: the increasingly marked differences between the profitability of capital and labour; the unemployment caused by technological change; and the unequal distribution between entrepreneurs and workers of the benefits produced by such change. Other trade union leaders highlight the loss of skills and do not see the increasing versatility of the worker as a positive feature. On the other hand, the more positive images assume that the intrinsic effects of the changes in the material world are beneficial not only in the sphere of work, but also through the general improvement in the quality of life that the new technologies make possible. This optimism is based more on the aggregate effects of the potential of the new technologies than on the actual sphere of work, although there are explicit references to certain advantages in respect of occupational health, reduction of physical effort, and the acquisition of new skills.

I think, however, that there is a prior query which calls for a more detailed answer. Up to what

point can the question of equity be reduced to exclusively technical or technological variables? In other words, we wonder if it is really possible to examine the question of equity as though each particular technique was naturally associated with certain degrees and types of equity, regardless of other factors (technological determinism).

There are ample reasons for holding that the new technologies can add new components to the problem of equity, displace others, or change the type of conflict over the distribution of social goods. Ultimately, however, the degree of equity is the result of processes which take place on the political level.

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International competitiveness and specialization

*Ousmène Jacques Mandeng**

This paper takes as its starting point the idea that the overall benefits of competition are largely determined by dynamic changes in market patterns. The opportunities in trade depend obviously on how a country can serve the market and more obviously on how competitive it is. Attention will therefore be centered mainly on the interaction between competitiveness and changes in the market structure. This phenomenon is abstracted from conventional factors to explain trade patterns. The approach provides a descriptive and synthetic framework to identify and evaluate recent shifts in the patterns of competition and specialization of developed, developing and centrally planned economies in the OECD market.

A single-equation model is used to reveal a country's competitiveness in international markets against the background of the evolution of the market. The model measures the global share of a country in OECD imports as a function of structural and competitive factors and combines elements of constant-market-share analysis and portfolio planning in business management. The model is part of the "C.A.N." concept: a data bank application programme with methodological and analytical components.

Evidence is given that market growth determines an important proportion of the directions of competitiveness and specialization. The ability to direct competitiveness towards the evolution of the market explains much of the paradigm of international trade. This approach promises advances in the strategic orientation of trade policies.

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Introduction

If competitiveness is a country's major concern in international trade, then it should also be concerned about the attractiveness of the sectors in which it is competitive. In a "no-free-trade" world, trade policies should concentrate on those sectors considered most attractive. This is the conclusion of the advocates of the new thinking about trade theory as advanced by Brander and Spencer (1985) and Krugman (1984). This interest is shared, although from a different perspective, by the constant market share analysis school (Holden, Nairn and Swales, 1989), which explains how structural and non-structural changes affect the position of nations in international trade. Other approaches in economic literature that associate changing market patterns with economic performance, mainly in developing countries, focus on studies of export performance (Singer and Gray, 1988) and export instability (Love, 1985). Business economics literature on portfolio planning has developed various descriptive and analytic tools to link the competitive position of firms to market attractiveness (Gluck, 1985). However, the competitiveness of nations with regard to changing market patterns has received little attention in the literature. This may mean overlooking significant aspects of the importance of structural and competitive changes that affect the position of countries in international markets.

The present paper provides a summary descriptive framework for identifying changes in the patterns of competition and specialization in international trade. The analysis is considered to be a starting point for further case studies. A simple single-equation model derived from constant-market-share analysis (CMSA) and portfolio planning in business economics is presented to reveal and compare major recent changes in the competitive position of Eastern European, Latin American, OECD, and Southeast Asian countries. In contrast to traditional CMSA, the model describes how nations may direct their competitiveness in line with changing market structures. Evidence is presented that an important proportion of the patterns of competition and specialization is determined by market growth.

I

Competitiveness, specialization and market growth

This paper supposes that each country, regardless of its present trade orientation, has a strong interest in the OECD market. It is also assumed that countries will try to maximize their global share and that their individual success will reflect their capacity to be internationally competitive. Disregarding the nature of competition and pricing, it is assumed that global competitive performance depends upon the interaction of market shares and market attractiveness. Competitiveness is not regarded as an ambition *per se*, but as a consciously directed effort to win selected markets. This approach may be symbolized by Condliffe's (1958) comment on Baldwin (1958): "Those countries which cling too long to declining trades lose out in world markets. Those which are flexible enough to move with the times and keep abreast of the developing new demands maintain and improve their share of world trade".

Market attractiveness is associated with the concept of portfolio planning in business management¹. It refers here to structural shifts induced either by demand or by supply in the pattern of total OECD imports. Differences in the evolution of sectors are considered to provide different prospects for growth for a given com-

modity and are therefore of different degrees of interest for a country. Market growth is assumed to be a major criterion for classifying commodities, for reviewing the allocation of resources, and for determining competitive strategies. The descriptive tools of portfolio planning –the transfer of the analytical interpretations and business strategy deductions of portfolio planning to the country level is not considered to be feasible– will be extended to associated variations in market shares with market growth.

Specialization is rooted in the broad principles of comparative advantage. It is considered here in order to compare changes in a country's composition of trade relative to the market structure. For each individual country, specialization refers to the importance of a given sector relative to its global competitive position and/or relative to the market structure. The latter reflects a country's market adaptability and its allocation of sectoral trade as a function of market growth. Market adaptability expresses the relation between the directions of competitiveness and market evolution. It is considered to be a prerequisite for sustained global competitiveness.

II

The model

The underlying model is part of the "C.A.N." concept: a data bank application programme with methodological and analytical components². The

study uses total import flows of the OECD³ from 1978 to 1989 at the group level of the Standard International Trade Classification, Rev. 2 (SITC/2)⁴. The analysis is built on a simple single-equation model that derives from CMSA⁵, reduced to a two-

¹ It should be recalled that the major assumptions and the generic strategic assignments of portfolio planning have repeatedly been criticized and called into question.

² C.A.N. (Competitive Analysis of Nations) is a personal-computer-based data bank application programme, prepared by the author, containing trade data for over 70 countries from 1963-1989. All the following calculations are based on C.A.N. and may be obtained in detail from the author.

³ The OECD corresponds to one aggregated market composed of its 24 member States.

⁴ SITC/2 detects 239 sector groups (3-digit classification).

⁵ A brief description of CMSA may be found in Magee (1975).

dimensional approach. CMSA is normally broken down into four components that affect the evolution of the global market share: growth of world trade, differential product growth, differential market growth, and a residual or competitive effect. A CMSA approach detects the contribution of each of these four factors to a change in the global market share. C.A.N. refers only to the differential product growth, as referred here to market evolution, and the residual effect, as referred to competitiveness, both being treated as independent vectors. C.A.N. does not explain structural and non-structural effects on global market shares. It describes the way in which patterns of competition and specialization change against the background of market evolution.

The limitations of CMSA⁶ apply partially to the present analysis in its treatment of the level of sectoral disaggregation, the base period, and the reference market. The first consideration is part of any aggregation problem and must be treated as such. Although the second is simply an index-number problem, the underlying model is particularly sensitive to it. The marketplace selected was the OECD, because of its importance in world trade. It must be underscored that an evaluation based on market shares does reveal competitiveness but does not offer any explanation for it⁷. Market shares provide an illustration of ex-post performances by reducing the interaction of the different factors employed in the process of competition to one single constant.

The model is based on the assumptions that every sector considered has an atomistic market structure and that no sector is important enough to influence the total import pattern. The analysis measures the global share of a country in OECD imports as a function of structural and competitive factors. These can be summarized and exemplified by sectoral competitiveness, market adaptability, and comparative advantage. To simplify the evaluation, comparative advantage is regarded as a competitive factor and therefore

identified with competitiveness. The global share S_j is thus at any point of time, for a country's market shares s_{ij} and the group shares s_i , the weighted product of:

$$(1) \quad S_j = \sum_{i=1}^n \frac{M_{ij} M_i}{M_i M} = \sum_{i=1}^n s_{ij} s_i,$$

where i is one product or sector group, referred to as group, and j one country in total OECD imports M . Changes in S_j over time, using the average of the years 1978, 1979 and 1980 for the starting period and 1987, 1988 and 1989 for the ending period, are then determined to reveal the directions of competitiveness relative to changing market patterns. Constant market shares are thus given by $\Delta S_j = 0$ and differential group evolution or market attractiveness by variations of s_i . An increase in global market share therefore requires $\Sigma \Delta s_{ij} > \Sigma \Delta s_i^{-1}$. From equation (1) it can be seen that variations in s_i have a direct impact on S_j . The evaluation is based on a 2x2 competitive matrix (see figure 1), which is obtained from equation (1). The horizontal axis shows the evolution of a group share by $\Delta s_i \geq 0$ or $\Delta s_i < 0$ and the vertical axis the evolution of a country's share by $\Delta s_{ij} \geq 0$ or $\Delta s_{ij} < 0$, i.e. $\Delta s_i \geq 0$ for an increasing group, $s_i \text{ inc}$; and $\Delta s_{ij} \geq 0$, for a group in which the country is competitive, $s_i \text{ comp } j$. Each quadrant of the matrix exemplifies a country-specific combination of competitive position and market attractiveness:

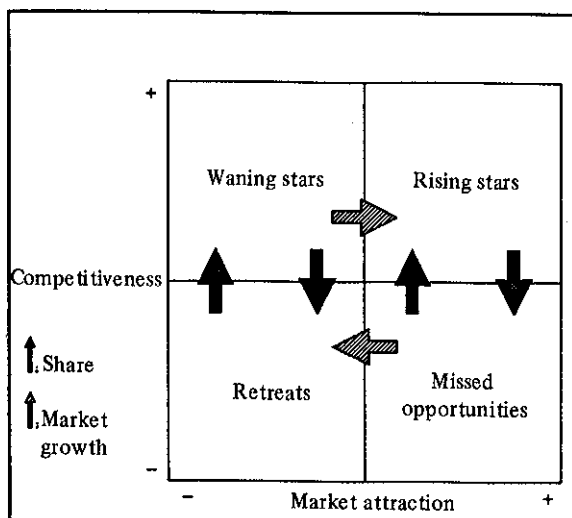
- "Retreats" represent declining groups in which the country is losing its market share.
- "Waning Stars" represent declining groups in which a country gains in market share.
- "Missed Opportunities" represent increasing groups in which a country is losing its market share.
- "Rising Stars" represent increasing groups in which a country gains in market share*.

⁶See Richardson (1971) for a discussion on the restrictions of CMSA.

⁷Chesnais (OECD, 1981) provides a detailed discussion on the use of market shares to measure competitiveness.

* These terms correspond respectively to the following ones used by Fajnzylber (1991): situation of retreat; situation of vulnerability; situation of missed opportunities; and optimum situation.

Figure 1
COMPETITIVENESS MATRIX



Source: Based on the share/growth matrix of the Boston Consulting Group (Gluck, 1985).

The relative importance of each competitive position within the matrix is expressed through the country's trade pattern, i.e., the contribution of each group c_{ij} , where $c_{ij} = M_{ij} / M_j$. Diversification in the trade pattern is thus given by $\Delta c_{ij} \geq 0$ or $\Delta c_{ij} < 0$.

Market specialization relates the evolution of the relative importance of a commodity group for a country to the evolution of the OECD import pattern. The ratio between a country's trade pattern and market pattern is expressed by k , where $k_{ij} = c_{ij} / s_i$ and $k_{ij} \geq 1$ for groups in which the country is specialized and where k_{ij} also derives from s_{ij} / S_j .⁸ Differences in the evolution of c_{ij} and s_i refer to either an approach to market pattern $\Delta k_{ij} \geq 0$ or a departure $\Delta k_{ij} < 0$:

⁸ k follows the revealed comparative advantage index by B. Balassa (1965).

$$k = \frac{M_{ij}}{M_j} : \frac{M_i}{M} = \frac{M_{ij}}{M_j} \frac{M}{M_i}$$

Exchanging the denominator gives

$$k = \frac{M_{ij}}{M_i} \frac{M}{M_j} = \frac{s_{ij}}{S_j}$$

$$(2) \quad \Delta c_{ij} \begin{matrix} > \\ < \end{matrix} \Delta s_i \begin{matrix} > \\ < \end{matrix} \Delta k_{ij} \begin{matrix} > \\ < \end{matrix} 0.$$

Δk thus reveals the interaction of changes in a country's trade pattern, for k_{inc} in increasing groups and k_{dec} in decreasing groups, relative to the market pattern or the sectoral competitive performance corresponding to the country's global performance.

Figure 2 shows one possible constellation of Δc_{ij} , Δs_i , and Δk_{ij} over time, based on equation (2), where c_i is a country's trade, s_i a group share and t stands for time. A country is considered to approach the market pattern when the slope of c_i is steeper, given the same sign as the slope of s_i . It departs from the market pattern when the slope of c_i is flatter, given the same sign as s_i or inverse to it.

The curves indicate the direction and magnitude of k as the ratio of c_{ij} and s_i . However, large absolute differences between c_{ij} and s_i when approaching 1 make it unlikely that both parameters will grow at the same rate. A high k beyond unity will probably not increase much more if c_{ij} greatly exceeds s_i , except in the case of total specialization. A very high c_{ij} may then lead to a suboptimal growth path. In contrast, a low k beyond unity may continue to rise if c_{ij} is sufficiently small.

The global specialization and competitiveness relative to market evolution express the country's total market adaptability K_j :

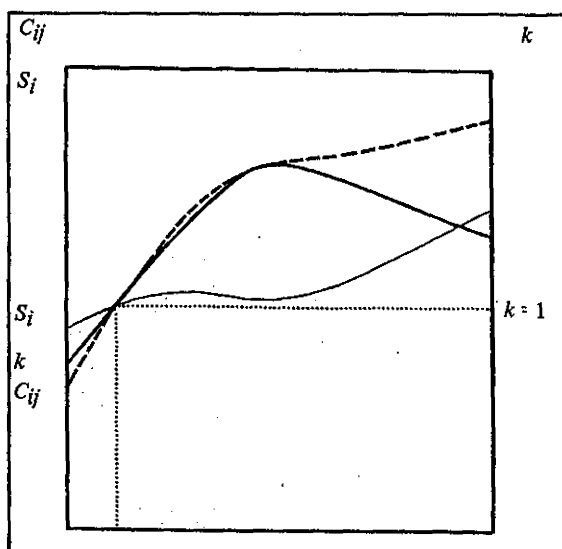
$$(3) \quad K_j = \frac{k_{iincj}}{k_{idecj}}$$

K_j admits two interpretative approaches⁹. The first contrasts the shares in increasing and declining groups, where an index beyond unity means a greater absolute competitive performance in increasing than in declining groups. The second combines the market orientation of increasing and

⁹ This derives from

$$\left(\frac{M_{iincj}}{M_j} : \frac{M_{iinc}}{M} \right) : \left(\frac{M_{idecj}}{M_j} : \frac{M_{idec}}{M} \right) = \frac{M_{iincj}}{M_{iinc}} : \frac{M_{idecj}}{M_{idec}} = \frac{S_{iincj}}{S_{idecj}}$$

Figure 2
MARKET SPECIALIZATION



decreasing groups. An index below unity denotes a relatively higher specialization in declining than in increasing groups.

Variations in K_j , where $\Delta K_j = K_{j1} / K_{j0}$ for period 0 to 1, refer thus to either a reallocation of competitiveness with regard to market evolution or to changes in the specialization pattern relative to market growth. This reveals the weight of increasing and decreasing sectoral groups within a nation's trade pattern and describes how nations compete and specialize globally with regard to market evolution.

The study examines data for five individual countries and four regions comprising 24 countries. The regions are calculated by simply adding together and weighing the individual performances of the countries in them. The countries were selected for their representativeness. The analysis is limited to the two summary approaches of the competitive matrix and the evolution of market adaptability. The first approach refers to an evaluation based on increasing groups and reflects the horizontal movement in the matrix. The second reflects an evaluation built on competitive groups reproducing the vertical movement. The adaptability index opposes the right half to the left half of the matrix.

III

Findings

The following tables represent the structural and competitive parameters mentioned above for the average year 1987-89, referred to as 1988, and their evolution with regard to the average year 1978-80, referred to as $\Delta 1979$.

Table 1 reports the composition of total OECD imports associated with market growth, mean group share size, and its standard deviation. Total imports in constant 1985 US dollars increased in the reference period by 11.4%; 57.2%

more for increasing groups and 33.3% less for decreasing groups. Increasing (decreasing) groups represent 69.6% (30.4%) of OECD imports. This corresponds to a rise of 42.3% (-40.1%) within the OECD import pattern (see appendix 2 for details on group shares).

Table 2 shows the global shares in total OECD imports for the countries and regions considered, referred to as areas, and their variations with regard to the starting period. Global shares and their evolution

Table 1

GROUP SHARES s_i IN OECD IMPORTS

Group	1988%	$\Delta 1979\%$	Mean 1988%	Std. Deviation
Increasing	69.62	41.15	0.51	0.66
Decreasing	30.38	-40.06	0.30	0.60

indicate the absolute competitive performance and the level of international penetration. In 1988, the non-OECD areas accounted for 9.8% of total OECD imports and increased by 8.3%. This increase was largely due to the performance of Southeast Asia, including Korea, referred to as All Southeast Asia, which accounted for 41.3% of the total share of the non-OECD countries in that year (compared with 28.0% in 1979). Eastern Europe and the Soviet Union, referred to as All Eastern Europe, and Latin America including Brazil and Mexico, referred to as All Latin America, recorded declining shares within the non-OECD countries, falling by 33.3% and 7.3% respectively. The Group of Seven (G7) increased its share relative to the non-OECD areas by 1.0%.

Intraregional variations are high within the non-OECD areas. Korea's relative share within All Southeast Asia increased by 84.0%. Brazil and

Mexico increased 51.3 and 74.2 points more than Latin America, while the Soviet Union decreased 7.3 points in relation to Eastern Europe. Absolute intraregional share differences are low and indicate the importance of the countries selected within their regions. Clearly, interregional differences may signify different historic trade orientations with regard to the OECD market: for example, All Latin America and All Eastern Europe long pursued inward looking policies that made the OECD market a target of less importance. However, different global shares may reflect unequal opportunities for changing the competitive position, and small areas will probably show more variation. The proportion of shares between the non-OECD and OECD areas has remained stable, whereas the pattern of shares between the non-OECD areas changed significantly.

Table 2

GLOBAL SHARE IN TOTAL IMPORTS OF OECD

Country	1988%	$\Delta 1979\%$	Mean 1988%	Std.Deviation
Brazil	1.18	20.14	1.35	3.33
Mexico	1.48	43.07	1.11	2.14
South Korea	2.10	127.79	1.80	3.28
Soviet Union	1.12	-30.37	0.86	2.17
Latin America ^a	1.44	-31.12	1.23	2.70
Southeast Asia ^b	2.29	24.76	2.45	6.00
Eastern Europe ^c	1.02	-23.08	1.39	2.28
Group of Seven ^d	52.33	14.95	49.85	19.79
Total	62.96	13.75		

^a Argentina, Chile, Colombia, Costa Rica, Ecuador, Peru, Venezuela.

^b Malaysia, Philippines, Singapore, Thailand.

^c Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania.

^d Canada, France, Germany (Federal Republic), Italy, Japan, United Kingdom, United States of America.

Table 3 indicates share performance, contribution and specialization for the groups that increased their shares in OECD imports. The data suggest the different impacts these groups exert within the areas' patterns of competition, contribution, and specialization. The figures refer to overall performance in increasing groups relative to global performance.

The findings reveal great differences in the performance in increasing groups (see table 3). Korea and the G7 each carry on over 80% of their trade in increasing groups, in contrast with the Soviet Union, where the figure is only 15.5%. Within these groups, the best performance is that of Korea,

which shows the highest specialization by registering a 1.3 times higher market share in increasing groups than in its global share, although it still grows faster globally than in increasing groups (as indicated by its negative Δk). This departure from market pattern is subject to a decrease of $\Delta C_{i inc j}$ relative to $\Delta S_{i inc}$, where high contribution levels cannot increase at the same rate as increases in group share, thus approaching a saturation point. In contrast with the G7, Korea remains highly specialized in increasing groups combined with great competitiveness. The figure for the G7 becomes even worse when Japan is excluded, giving $\Delta S_{i inc j} = -10.6\%$.

Table 3

INCREASING GROUPS IN OECD IMPORTS

Country j	Share performance $s_{i inc j}$		Contribution $c_{i inc j} \%$		Specialization index $k_{i inc j}$	
	1988	$\Delta 1979$	1988	$\Delta 1979$	1988	$\Delta 1979$
Brazil	0.84	50.40	49.65	76.73	0.71	24.19
Mexico	1.37	63.55	64.52	61.38	0.93	14.31
South Korea	2.69	80.45	89.01	11.83	1.28	-20.78
Soviet Union	0.25	-16.81	15.50	68.67	0.22	19.48
Latin America	0.42	8.04	20.61	121.89	0.30	57.17
Southeast Asia	2.21	63.66	67.58	85.75	0.97	31.58
Eastern Europe	0.79	-34.17	53.65	20.88	0.77	-14.37
Group of Seven	60.40	-3.91	80.36	18.01	1.15	-16.41
Total	68.97	-2.02				

All the remaining areas share the feature of not being specialized in increasing groups, but except for Eastern Europe they try to make their trade patterns approach the market structure. The differences in k over a range of 0.7 points between Southeast Asia and Latin America illustrate the different starting levels. Positive variations of $k_{i inc j}$ reveal that these areas increase their competitiveness more in increasing groups than globally, and high contributions by such increases reflect the areas' effort to diversify towards these groups. In contrast, Eastern Europe has declined the most of all areas considered, although the relatively high level of contribution (38.2 points more than for the Soviet Union, which shows the lowest commitment) indicates that increasing groups are important in Eastern Europe trade. Eastern Europe shows a higher absolute share performance than Latin America. The departure from market pattern (from a k beyond unity) indicates divergence of All Eastern Europe trade with respect to the OECD market pattern.

The evaluation based on market growth revealed increases in share performance in groups that increased their shares in the OECD import structure. These were attained only by the non-OECD areas considered (except All Eastern Europe), although the G7 remains the dominant competitor in absolute terms. Variations in specialization patterns indicate that the non-OECD areas (except All Eastern Europe) penetrate more into rising groups, thus directing their trade pattern more and more towards those groups that have long been the absolute domain of the OECD.

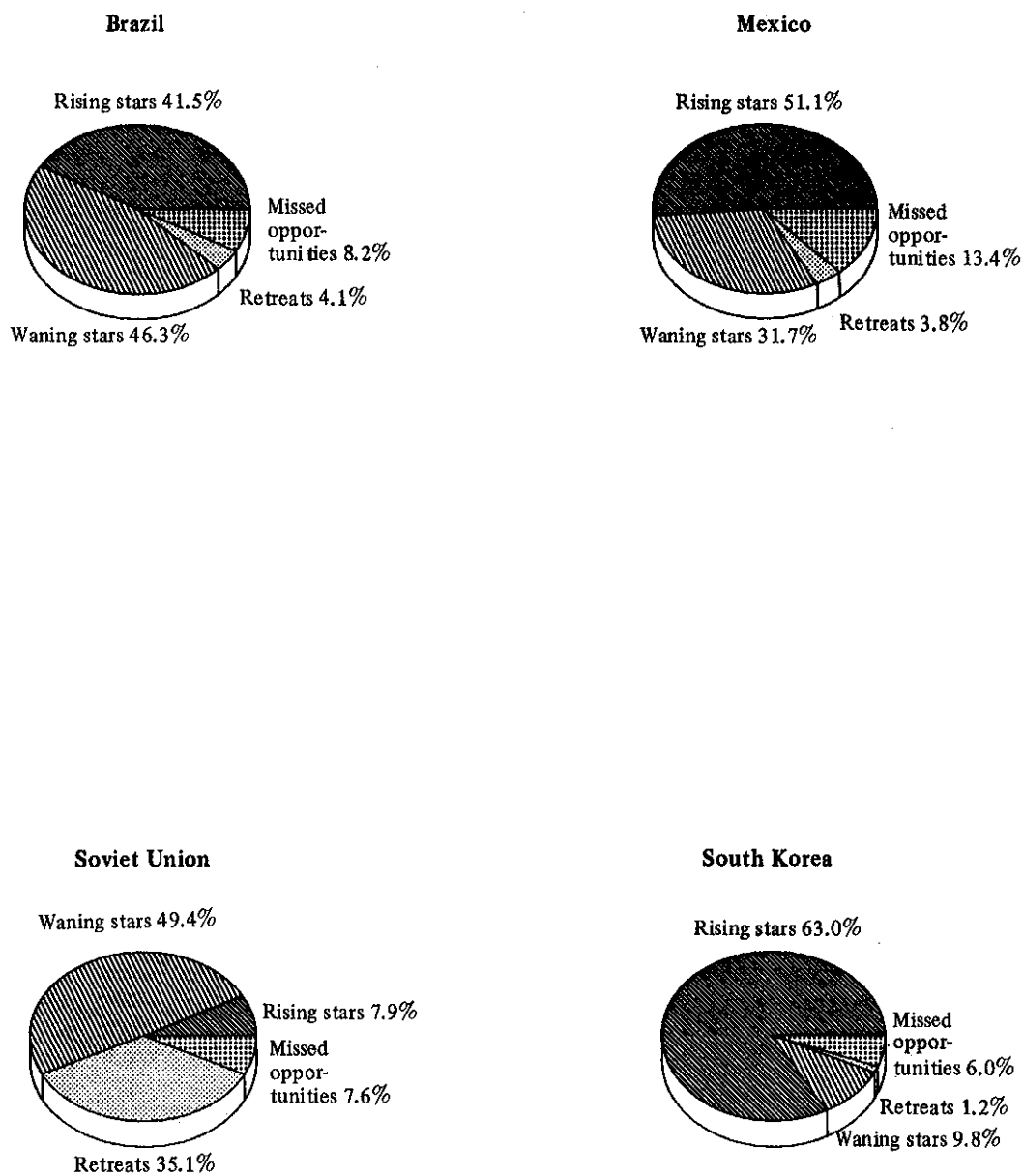
Table 4 shows the share performance, contribution and specialization indices for groups in which the countries considered are competitive, regardless of market evolution, and confirms the findings above. Except for Brazil, Korea, and Southeast Asia, all the remaining areas register competitiveness in generally declining sectors, as indicated by $\Delta c_{i comp j} < \Delta k_{i comp j}$ from equation (2). Competitiveness accompanies high specialization indices for all non-OECD areas, in contrast with the G7. The competitiveness of the G7 deviates towards declining groups, in keeping with the above findings. In contrast, Brazil, Mexico and Korea carry on over 80% of their trade in groups in which they are competitive. Contribution patterns indicate the importance of competitive groups within the non-OECD areas' trade pattern, with a range of 56.2 points between the contribution figures for Korea and Eastern Europe, in comparison with a $c_{i comp j}$ of only 20.7% for the G7.

The above findings are summarized in figure 3, which represents the competitive matrices for the areas considered, in pie-chart format.

The charts indicate the proportions of competitive and increasing groups in the country's trade pattern for the end of the base period 1988. Stripes represent groups in which the country is competitive and dots indicate groups in which the country is not competitive. Fat stripes and fat dots represent increasing groups and light stripes and light dots represent decreasing groups (see appendix 1 for details on the composition of the matrix).

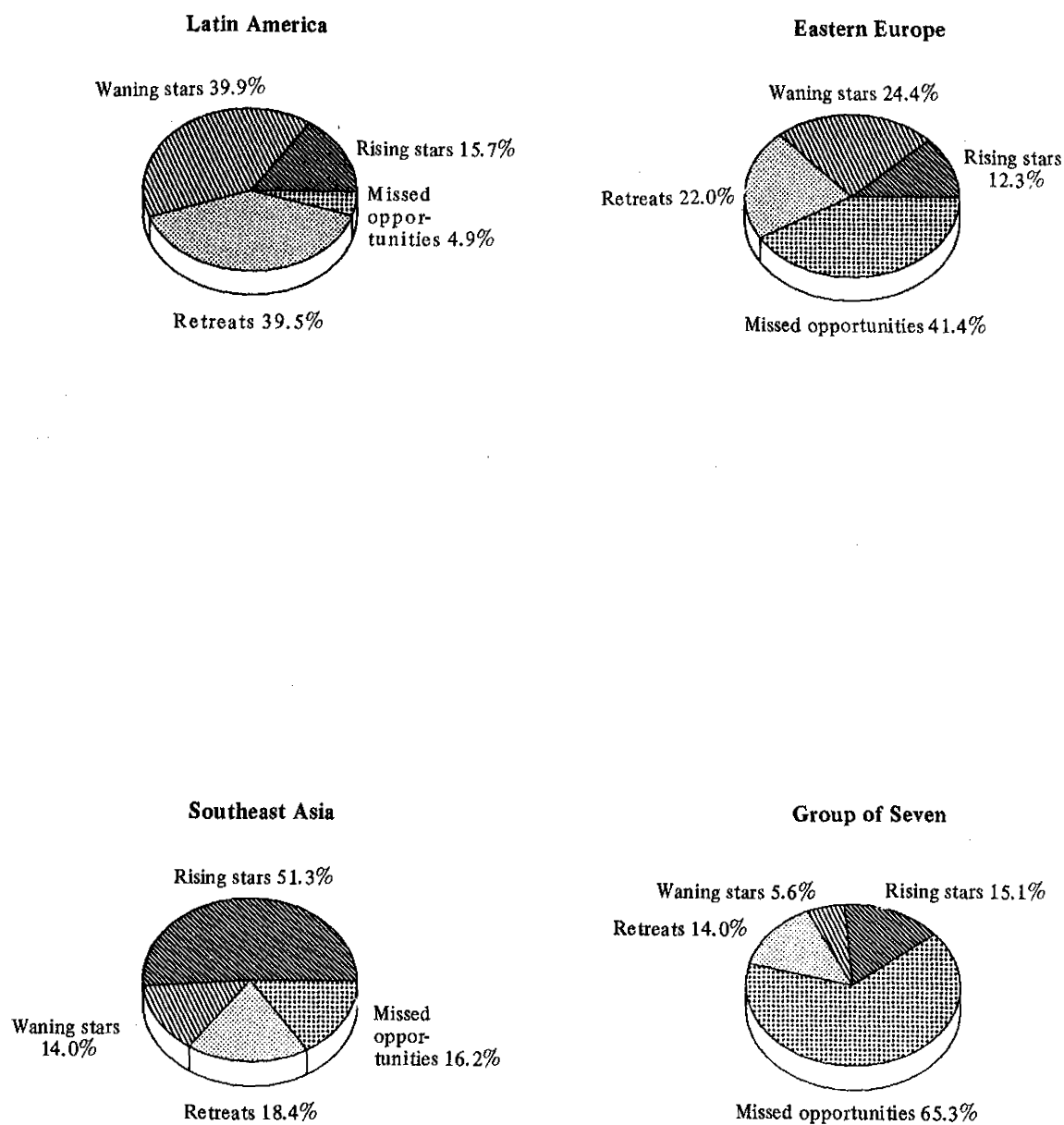
Figure 3

COMPETITIVENESS MATRIX: PERCENTAGE SHARES, 1988



Source: "CAN".

Figure 3 (conclusion)



Source: "CAN".

Table 4

COMPETITIVE GROUPS IN OECD IMPORTS

Country j	Share performance $s_{i \text{ comp } j}$		Contribution $c_{i \text{ comp } j} \%$		Specialization index $k_{i \text{ comp } j}$	
	1988	$\Delta 1979$	1988	$\Delta 1979$	1988	$\Delta 1979$
Brazil	1.52	27.78	87.73	15.25	1.29	6.37
Mexico	1.63	85.02	82.78	24.72	1.10	29.32
South Korea	2.21	171.75	92.82	20.95	1.05	19.30
Soviet Union	1.59	12.99	57.32	32.94	1.42	62.28
Latin America	1.57	7.10	55.61	41.10	1.10	55.81
Southeast Asia	2.07	108.04	65.35	102.58	0.91	67.26
Eastern Europe	1.22	47.09	36.66	32.21	1.19	91.33
Group of Seven	44.26	76.79	20.69	9.10	0.85	53.80

The biggest contrast in the findings is between Korea and the G7, which display almost opposite contribution patterns with regard to the proportion of Rising Stars and Missed Opportunities. The non-OECD areas (except Korea) are characterized by many Retreats and Waning Stars, showing that they carry on a high proportion of their trade in declining groups. Consistently with Table 4, they are competitive (except for Korea, Mexico and Southeast Asia) mainly in declining groups, as indicated by the proportion of Rising and Waning Stars.

The matrix offers different interpretative approaches for evaluating the trade pattern of a nation. The crucial question is: what are the factors that make a country have a Rising or Waning Star? Why is group x a Rising Star for one area and a Missed Opportunity for another area? The matrix offers a simplified view of how countries direct their competitiveness with regard to market evolution. In that sense, if market evolution has an important impact on a country's gains from trade, Korea poses a case for thought.

Competitive and specialization patterns are further summarized by the adaptability index K , as shown in Table 5. K indicates global performance, contrasting increasing with declining groups. The index reveals the proportion of increasing relative to declining groups in a nation's trade pattern. The non-OECD areas (without Korea) have a weighted average adaptability index of 0.6. Those areas either register their greatest share performance or are more specialized in declining than in increasing groups. Southeast Asia ranks highest, followed by

All Latin America with 0.5 and All Eastern Europe with 0.3. Intraregional differences are high. Latin America reaches only 58.1% of Brazil's and 31.7% of Mexico's adaptability performance, while the Soviet Union ranks lowest of all, scoring only 16.0% of Eastern Europe's index.

Table 5

ADAPTABILITY K_j IN TOTAL IMPORTS OF OECD

Country j	1988	$\Delta 1979 \%$
Brazil	0.43	6.55
Mexico	0.79	15.80
South Korea	3.56	-11.66
Soviet Union	0.08	-25.44
Latin America	0.25	-0.24
Southeast Asia	0.91	54.36
Eastern Europe	0.50	-38.49
Group of 7	1.77	-19.23

These figures suggest four possible classifications different from those presented by Fajnzylber (1991) with regard to competitive and market adaptability performance:

- Countries with an adaptability index greater than unity and increasing ΔK . There were no such cases in this sample. Nonetheless, it should be noted that Singapore would have conformed to this classification if it had not been included in the Southeast Asia reference group. This classification represents countries improving their absolute specialization in increasing rather than decreasing groups.

- Countries with an adaptability index greater than unity and falling ΔK (Korea and the G7). This classification indicates that shares for increasing groups are greater than those for decreasing groups, and that there is greater specialization in increasing rather than decreasing groups. Nonetheless, a diminishing K signifies that decreasing groups become relatively more important in the competitive and structural trade patterns. Korea displays the highest ability to adapt its trade pattern to recent market evolution.
- Countries with an adaptability index below unity and rising ΔK include Brazil, Mexico, and Southeast Asia. This classification approaches the market pattern while still being more specialized and more competitive in absolute terms in declining rather than in increasing groups. These areas diversify to a substantial extent towards rising groups, registering higher growth rates in increasing than in decreasing groups. This cluster demonstrates a significant move away from the traditional trade pattern that may largely be identified with declining groups within OECD market evolution.
- Countries with an adaptability index below unity and falling ΔK include Latin America, Eastern Europe and the Soviet Union. This grouping includes the main departures from the OECD market pattern: Latin America and the Soviet Union have not improved their low adaptability performance, maintaining a high specialization

level in decreasing groups. The competitive decline of Eastern Europe is most noteworthy. It shows an absolute K performance somewhat above that of Brazil, although it started with an adaptability index at the beginning of the base period higher than that of Southeast Asia.

The adaptability indices outline the evolution of the patterns of competition and specialization of the non-OECD and OECD areas. The non-OECD areas (except Latin America, Eastern Europe and the Soviet Union) approach the market pattern, thus reducing the differences in the allocation of shares related to market growth between the non-OECD and OECD countries. Absolute differences in the adaptability performance reveal that the non-OECD countries (except Korea) continue to specialize mainly in declining groups. However, increases in adaptability by the non-OECD areas and decreases by the G7 indicate important changes with regard to competitiveness and specialization between non-OECD and OECD areas. This reversal shows that important departures from conventional patterns of competitiveness and specialization are occurring in these areas. The competitive matrix is, in that sense, an open concept that does not impose any strategic recommendations. It is, of course, not reasonable to create a portfolio of all but Rising Stars, but it is a useful way of identifying trade strategies and competitors and revising existing trade orientations.

IV

Conclusions

The competitive and specialization patterns of the countries and regions considered in OECD imports were studied with regard to market growth and a simple single-equation model was presented to describe the directions of competitiveness against the background of changing market patterns. The reference to market growth was motivated by the idea that competition and specialization efforts yield different benefits according to market evolution. The approach provides a transparent framework and terminology for analysis of competitiveness as related to market growth.

The findings reveal that there are important shifts in the patterns of competitiveness and specialization between OECD and non-OECD countries and regions and that these are related to changes in the market structure. The ability to direct competitiveness towards the evolution of the market explains much of the paradigm of international trade. This approach could represent the starting point for further case studies on sectors and countries. It also promises advances in defining the strategic orientations of trade policies.

Appendix 1

COMPETITIVE MATRIX, 1979-1988

A. Countries

BRAZIL				MEXICO			
<i>Rising Stars</i>				<i>Rising Stars</i>			
058	Fruit, preserved	5.6	19.7	16.6	713	Piston engines	4.7 6.0 4.1
851	Footwear	5.4	6.5	5.5	773	Equip. distrib. electr.	4.4 16.8 11.4
684	Aluminium	3.0	3.4	2.9	781	Pass. motor cars	4.2 1.0 0.7
<i>Waning Stars</i>				<i>Waning Stars</i>			
071	Coffee	9.1	20.3	17.2	333	Petroleum oils, crude	21.8 6.0 4.1
281	Iron ore	8.1	27.7	23.4	071	Coffee	1.8 5.0 3.4
081	Feeding stuffs	6.8	14.7	12.4	334	Petroleum prods., refined	6.8 14.7 12.4
<i>Missed Opportunities</i>				<i>Missed Opportunities</i>			
713	Piston engines	2.8	2.9	2.5	764	Telecom. equipment	3.3 3.2 2.2
651	Textile yarn	1.2	2.0	1.7	054	Vegetables, fresh	2.2 5.5 3.8
036	Crustaceans, fresh	0.6	1.5	1.2	036	Crustaceans, fresh	1.3 3.8 2.6
<i>Retreats</i>				<i>Retreats</i>			
072	Cocoa	1.4	8.7	7.4	681	Silver	1.5 7.0 4.7
248	Wood, simply worked	0.9	1.4	1.2	278	Other crude minerals	0.6 3.8 2.6
061	Sugar and honey	0.5	2.6	2.2	341	Gas, natural	0.3 0.4 0.3
KOREA				SOVIET UNION			
<i>Rising Stars</i>				<i>Rising Stars</i>			
851	Footwear	7.8	16.4	7.8	683	Nickel	2.4 15.2 13.5
781	Pass. motor cars	5.6	1.9	0.9	251	Pulp and waste paper	1.0 1.6 1.4
848	Art. of apparel	5.0	25.7	12.2	034	Fish, fresh	0.6 1.2 1.1
<i>Waning Stars</i>				<i>Waning Stars</i>			
674	Flat-rolled prods.	1.7	3.5	1.7	333	Petr. oils, crude	22.3 4.7 4.2
653	Fabrics, man-made textile	1.3	6.5	3.1	341	Gas, natural	10.4 11.0 9.7
678	Tubes and pipes of iron	1.0	4.9	2.3	247	Wood, rough	3.1 11.3 10.1
<i>Missed Opportunities</i>				<i>Missed Opportunities</i>			
034	Fish, fresh	1.7	6.4	3.0	781	Pass. motor cars	1.7 0.3 0.3
844	Undergarments	1.6	13.4	6.4	684	Aluminium	1.3 1.4 1.3
651	Textile yarn	1.0	2.8	1.4	522	Inorg. chem. elements	1.1 3.4 3.0
<i>Retreats</i>				<i>Retreats</i>			
654	Other text. fabrics	0.5	4.8	2.3	334	Petr. prods., refined	21.4 9.6 8.5
121	Tobacco, unmanuf.	0.2	2.3	1.1	248	Wood, simply worked	3.3 5.10 4.4
248	Wood, simply worked	0.1	0.4	0.2	667	Pearls, prec. stones	2.4 2.7 2.4

B. Areas

LATIN AMERICA				SOUTHEAST ASIA			
<i>Rising Stars</i>				<i>Rising Stars</i>			
684	Aluminium	c% 2.6	s% 3.6	k 2.5	752	Aut. data proc. mach	c% 5.1
036	Crustaceans, fresh	2.4	6.8	4.7	759	Parts for 751, 752	4.9
034	Fish, fresh	1.8	4.6	3.2	762	Radio-broadc. receivs.	2.2
<i>Waning Stars</i>				<i>Waning Stars</i>			
333	Petr. oils, crude	17.6	4.7	3.3	247	Other wood, rough	5.0
057	Fruit, fresh	8.3	15.1	10.5	341	Gas, natural	7.3
081	Feeding stuffs	3.9	10.1	7.1	667	Pearls., prec. stones	3.2
<i>Missed Opportunities</i>				<i>Missed Opportunities</i>			
611	Leather	1.3	7.1	5.0	776	Thermionic tubes	11.0
651	Textile yarn	0.6	1.1	0.8	054	Vegetables, fresh	16.7
848	Art. of apparel	0.3	0.9	0.6	058	Fruits, preserved	7.3
<i>Retreats</i>				<i>Retreats</i>			
334	Petr. prods., refined	12.4	7.1	4.9	232	Natural rubber	1.8
071	Coffee	8.4	22.7	15.8	334	Petro. prod., refined	6.8
682	Copper	7.9	16.2	11.3	248	Wood, simply worked	3.0
EASTERN EUROPE				GROUP OF SEVEN			
<i>Rising Stars</i>				<i>Rising Stars</i>			
684	Aluminium	c% 1.9	s% 1.8	k 1.8	792	Aircraft	c% 2.1
583	Polymerization prods.	1.7	1.3	1.3	764	Telecom. equip.	84.0
034	Fish, fresh	0.7	1.3	1.3	776	Thermionic tubes	1.2
<i>Waning Stars</i>				<i>Waning Stars</i>			
334	Petro. prod. refined	9.7	4.0	3.9	333	Petro. oils, crude	1.7
674	Flat-rolled prods.	3.1	3.1	3.0	248	Wood, simply worked	58.7
673	Iron bars	2.0	3.8	3.8	011	Meat, fresh	1.1
<i>Missed Opportunities</i>				<i>Missed Opportunities</i>			
821	Furniture	4.4	4.3	4.2	781	Pass. motor cars	9.5
843	Outer garments, women	2.8	3.8	2.7	784	Parts for motor vehicles	81.4
842	Outer garments, men	2.3	3.7	3.6	752	Auto data proc. mach.	1.6
<i>Retreats</i>				<i>Retreats</i>			
322	Coal and lignite	3.5	5.7	5.6	674	Flat-rolled prods.	3.2
011	Meat, fresh	3.2	3.3	3.3	334	Petro. prods., refined	69.8
248	Wood, simply worked	1.8	2.4	2.4	723	Civil eng. equipt.	1.3

Appendix 2
A. INCREASING GROUPS *s_{inc}* IN OECD IMPORTS

SITC	Description	1988%	Δ1979%*	SITC	Description	1988%	Δ1979%*
022	Milk and cream	0.22	29.41	672	Ingots	0.49	28.95
024	Cheese and curd	0.28	0.00	679	Iron and steel castings	0.04	33.33
034	Fish, fresh	0.57	39.02	683	Nickel	0.18	5.88
035	Fish, dried	0.07	0.00	684	Aluminium	1.05	40.00
036	Crustaceans and moll., fresh	0.50	42.36	686	Zinc	0.11	22.22
037	Crustaceans and moll., prep.	0.22	37.50	688	Uranium depleted in U235	0.00	0.00
046	Meal and flour of wheat	0.01	0.00	691	Structures of iron	0.22	22.22
048	Cereal preparations	0.24	41.18	692	Metal containers	0.12	20.00
054	Vegetables, fresh	0.59	11.32	693	Wire products	0.11	0.00
058	Fruit, preserved	0.34	21.43	694	Nails, screws, nuts, bolts	0.24	9.09
073	Chocolate	0.14	0.00	695	Tools	0.37	8.82
075	Spices	0.05	25.00	696	Cutlery	0.09	12.50
098	Edible prods. n.e.s.	0.20	53.85	699	Manuf. base metals	0.74	17.46
111	Non-alcoholic beverages	0.06	100.00	713	Intern. combust. eng.	1.14	39.02
112	Alcoholic beverages	0.63	0.00	714	Engines and motors, non-elec.	0.63	75.00
122	Tobacco, manufactured	0.17	30.77	716	Rotating elec. plant	0.34	25.93
251	Pulp and waste paper	0.68	9.68	718	Oth. power gen. mach.	0.10	11.11
273	Stone, sand and gravel	0.10	0.00	724	Tex., leather mach.	0.44	15.79
288	Non-ferrous base metal waste	0.29	7.41	725	Paper mill mach.	0.18	63.64
292	Crude vegetable materials	0.40	11.11	726	Printing mach.	0.34	70.00
351	Electric current	0.13	44.44	727	Food-process. mach.	0.11	37.50
512	Alcohols, phenols	0.28	21.74	728	Other machinery	0.87	47.46
513	Carboxylic acids	0.29	20.83	736	Machine-tools	0.59	15.69
514	Nitrogen-function compounds	0.53	55.88	737	Metalworking mach.	0.15	15.38
515	Organo-inorgan. compounds	0.42	20.00	741	Heating, cooling equip.	0.50	42.86
516	Other organic chemicals	0.22	29.41	742	Pumps for liquids	0.30	20.00
522	Inorganic chemical elem.	0.36	2.86	743	Pumps not for liquids	0.53	35.90
523	Other inorganic chemicals	0.26	8.33	744	Mechan. handl. equip.	0.59	31.11
531	Synthetic organic dyestuffs	0.20	17.65	745	Other non-elec. mach.	0.45	32.35
532	Dyeing and tanning extracts	0.01	0.00	749	Non-electric parts	1.00	19.05
533	Pigments, paints	0.30	50.00	751	Office machines	0.42	2.44
541	Medicinal, pharmaceut. prod.	1.02	43.66	752	Aut.data proc.mach.	2.37	196.25
551	Essential oils	0.10	11.11	759	Parts for 751, 752	1.57	214.00
553	Perfumery, cosmetics	0.24	84.62	761	Television receivers	0.42	44.83
554	Soap, cleansing preps.	0.17	21.43	762	Radio-broadc. receiv.	0.48	23.08
572	Explosives, pyrotec. prod.	0.03	50.00	763	Sound and video rec. equip.	0.55	83.33
582	Condensation, polycondens. prods.	0.53	29.27	764	Telecommun. equip.	1.49	81.71
583	Polymerization prods.	1.28	36.17	771	Electric power mach.	0.27	92.86
591	Disinfectants, insecticides	0.18	12.50	772	Elec. app. for mak.circ.	0.92	53.33
592	Starches, inulin	0.16	45.45	773	Equip.for distr. elec.	0.38	111.11
598	Miscell. chemical products n.e.s.	0.61	27.08	774	Elec. app. for med. purposes	0.22	57.14
611	Leather	0.26	13.04	776	Thermionic, cold cathode tubes	1.51	93.59
612	Manufactures of leather	0.09	50.00	778	Elec. mach. n.e.s.	1.17	50.00
621	Materials of rubber	0.12	20.00	781	Pass. motor cars	6.09	50.00
625	Rubber tyres and tubes	0.53	20.45	782	Mot. veh. for goods transport	1.20	51.90
628	Articles of rubber n.e.s.	0.16	45.45	783	Road mot. veh. n.e.s.	0.20	42.86
633	Cork manufactures	0.02	0.00	784	Parts f. 722, 781-83	2.69	25.70
635	Wood manufactures	0.24	20.00	786	Trailers	0.14	0.00
641	Paper and paperboard	1.67	32.54	792	Aircraft	1.32	32.00
642	Paper and paperboard, cut	0.39	39.29	812	Sanitary fixtures	0.28	40.00
651	Textile yarn and fibres	0.74	2.78	821	Furniture	1.03	49.28
656	Tulle, lace, embroidery	0.07	16.67	831	Travel goods	0.29	52.63
657	Special textile fabrics	0.29	16.00	842	Outer garments, men	0.64	28.00
658	Made-up articles of textiles	0.26	23.81	843	Outer garments, wom.	1.01	57.81
661	Lime, cement	0.22	46.67	844	Under garments not knitted	0.25	31.58
663	Mineral manufactures n.e.s.	0.24	20.00	845	Outer garments	0.93	60.34
664	Glass	0.29	26.09	846	Undergarments, knitted	0.45	40.63
665	Glassware	0.20	11.11	847	Clothing accessories	0.16	33.33
666	Pottery	0.17	0.00	848	Art. of apparel	0.41	32.26

*A indicates variation with respect to 1979.

851	Footwear	1.00	26.58	894	Baby carriages	0.85	57.41
871	Optical instrum.	0.11	83.33	895	Office supplies	0.13	62.50
872	Medical instrum.	0.29	70.59	896	Works of art	0.41	32.26
873	Meters and counters	0.04	0.00	897	Jewellery	0.40	53.85
874	Measur. instr. n.e.s.	1.13	48.68	898	Musical instruments	0.58	123.08
882	Photographic supplies	0.43	22.86	899	Other miscell. manuf.	0.36	21.14
884	Optical goods n.e.s.	0.18	12.50	911	Postal packages	0.04	0.00
892	Printer matter	0.60	22.45	931	Special transactions	1.41	60.23
893	Art. n.e.s. of div. 58	0.87	70.59	951	Armoured fighting veh.	0.17	88.89

B. DECREASING GROUPS *s_{idcc}* IN OECD IMPORTS

SITC	Description	1988%	Δ1979% ^a	SITC	Description	1988%	Δ1979% ^a
001	Live animals for food	0.27	-12.90	322	Coal, lignite and peat	0.63	-28.41
011	Meat, fresh	0.97	-11.82	323	Briquettes, coke	0.07	-53.33
012	Meat, preserved	0.05	-37.50	333	Petroleum oils, crude	5.34	-66.71
014	Meat, extracts	0.14	-22.22	334	Petroleum prod., refined	2.51	-40.24
023	Butter	0.11	-20.00	335	Residual petr. products	0.21	-19.23
025	Eggs	0.04	-20.00	341	Gas, natural	1.06	-36.14
041	Wheat	0.21	-34.37	411	Animal oils and fats	0.04	-50.00
042	Rice	0.05	-16.67	423	Fixed veg. oils	0.12	-14.29
043	Barley, unmilled	0.06	-50.00	424	Other fixed veg. oils	0.10	-47.37
044	Maize, unmilled	0.22	-53.19	431	Animal and veg. oils, processed	0.05	-28.57
045	Cereals unmilled, other	0.05	-50.00	511	Hydrocarbons	0.46	-11.54
047	Other cereal meals	0.01	-0.00	524	Radioactive materials	-0.27	-30.77
056	Vegetables, prepared	0.16	-20.00	562	Fertilizers, manuf.	0.30	-14.29
057	Fruits and nuts, fresh	0.79	-4.82	584	Regenerated cellulose	0.06	-25.00
061	Sugar and honey	0.22	-51.11	585	Other artif. resins	0.02	-50.00
062	Sugar confectionery	0.06	-0.00	613	Furskins, tanned	0.06	-25.00
071	Coffee	0.53	-52.25	634	Veneers, plywood	0.31	-6.06
072	Cocoa	0.19	-51.28	652	Cotton fabrics	0.37	-11.90
074	Tea and maté	0.05	-37.50	653	Fabrics, woven m.- m. fib.	0.43	-2.27
081	Feeding stuffs for animals	0.55	-15.38	654	Textile fabrics	0.22	-4.35
091	Magarine	0.02	-50.00	655	Knitted fabrics	0.10	-23.08
121	Tobacco, unmanufactured	0.18	-33.33	659	Floor coverings	0.30	-11.76
211	Hides and skins	0.18	-18.18	662	Clay constr. mat.	0.21	-8.70
212	Furskins	0.07	-56.25	667	Pearls, precious stones	1.00	-27.54
222	Oilseeds for soft veg. oils	0.38	-38.71	671	Pig iron	0.29	-6.45
223	Oilseeds for other veg. oils	0.02	-60.00	673	Iron and steel bars	0.53	-20.90
232	Natural rubber latex	0.15	-34.78	674	Universals, plates	1.01	-4.72
233	Synthetic rubber latex	0.15	-6.25	675	Hoop and strip of iron	0.05	-79.17
244	Cork, natural	0.00	-100.00	676	Rails and railway track elements	0.02	-33.33
245	Fuel wood	0.01	-0.00	677	Iron and steel wire	0.09	-18.18
246	Pulpwood	0.09	-25.00	678	Tubes, pipes of iron	0.45	-16.67
247	Other wood, rough	0.35	-43.55	681	Silver	0.31	-44.64
248	Wood simply worked	0.75	-20.21	682	Copper	0.70	-14.63
261	Silk	0.02	-33.33	685	Lead	0.04	-63.64
263	Cotton	0.18	-40.00	687	Tin	0.05	-72.22
264	Jute	0.00	-100.00	689	Miscell. non-fer. metals	0.07	-41.67
265	Vegetable textile fibres	0.02	-33.33	697	Housh. eqp. of base met.	0.07	-41.67
266	Synthetic fibres	0.11	-8.33	711	Steam boilers	0.02	-33.33
267	Other man-made fibres	0.04	-0.00	712	Steam power units	0.03	-40.00
268	Wool and other animal hair	0.25	-10.71	721	Agricul. mach.	0.27	-20.59
269	Old clothing	0.01	-50.00	722	Tractors	0.22	-26.67
271	Fertilizers, crude	0.06	-53.85	723	Civil engineering equipt.	0.47	-4.08
274	Sulphur	0.03	-40.00	785	Motorcycles	0.26	-16.13
277	Natural abrasives	0.04	-33.33	791	Railway vehicles	0.08	-11.11
278	Other crude minerals	0.24	-22.58	793	Ships, boats, warships	0.45	-8.16
281	Iron ore and concentrates	0.34	-46.87	881	Photographic app.	0.25	-10.71
282	Waste and scrap iron and steel	0.17	-22.73	883	Cinematog. film, exposed	0.01	-50.00
286	Ores and conc. of uranium	0.00	-100.00	885	Watches and clocks	0.30	-9.09
287	Ores and conc. of base metals	0.63	-33.68	941	Animals, live	0.01	-0.00
289	Ores and conc. of prec. metals	0.06	-50.00	961	Coin, not legal tender	0.01	-87.50
291	Crude animal materials	0.11	-15.38	971	Gold, non-monetary	0.58	-9.37

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Commodity exports and Latin American development

*José Miguel Benavente**

In the past, international cooperation in the area of commodities has been concentrated on measures to stabilize world prices through agreements between producers and consumers. At present, the questions of the level and stability of world prices continue to be just as important as ever, but there are few possibilities of resuming international cooperation of this type. Furthermore, the level of final prices is only one of the problems related with production costs (which in turn depend on the technologies applied) and other aspects regarding the added value retained in the producer countries. The problems and opportunities that arise in this field are consequently very extensive and a better idea can be gained of them by looking at commodities within the context of the economy as a whole. Specifically, if it is desired to maximize the income obtained from the exploitation of natural resources for export and their contribution to economic development, there are four areas which are of special importance for the countries of Latin America in the present circumstances: technology, market access, marketing and processing. This article summarizes the special characteristics of the Latin American economies which make these four areas particularly important. These areas, whose close interlinkages make it difficult to try to attain improvements in one of them without also taking measures in the others, are dealt with successively in the following sections.

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I

Distinctive features of the Latin American economies and their primary sectors

1. *Natural resource endowment*

Latin America is a vast continent richly endowed with natural resources. Often, past development strategies—particularly those based on import substitution—neglected the potential of this natural wealth, which is one of the major assets of the continent. The countries of the region produce virtually the whole range of major commodities traded internationally. However, Latin America displays certain differences from other commodity-exporting regions as regards the composition of its exports.

Compared with Africa, whose commodity exports are to a large extent composed of tropical beverages and minerals, and parts of Asia, which rely on exports of vegetable oilseeds and oils, Latin America has a diversified export structure with temperate-zone agricultural commodities accounting for a substantial share of regional exports (table 1). Food is the major commodity export group for Latin America, and together with ores and metals it is the group in which the region has the highest share of world exports (12% in 1988), although this share, like that of all other commodity groups, has declined significantly since 1955. The composition of commodity exports is important, among other things, because different categories of commodities face different barriers in import markets. This influences the participation of Latin American countries in international negotiations and explains, for example, why several such countries are members of the Cairns Group of agricultural exporters established in the context of the Uruguay Round of trade negotiations.¹

¹ The members of the Cairns Group are Argentina, Australia, Brazil, Canada, Chile, Colombia, Fiji, Hungary, Indonesia, Malaysia, New Zealand, Philippines, Thailand and Uruguay.

Table 1

**LATIN AMERICA: STRUCTURE OF EXPORTS AND PARTICIPATION
IN WORLD EXPORTS, BY MAJOR PRODUCT GROUPS**
(Percentages)

	1955	1960	1970	1980	1988
<i>Structure of exports</i>					
All food items	44.5	42.6	40.9	29.1	30.4
Agricultural raw materials	11.4	9.5	5.8	3.1	3.7
Ores and metals	10.8	12.5	17.7	9.5	11.3
Fuels	30.0	31.9	24.7	42.4	19.8
Manufactured goods	3.1	3.4	10.6	14.7	33.8
Total	100.0	100.0	100.0	100.0	100.0
<i>Participation in world exports</i>					
All food items	20.5	17.5	15.7	14.2	12.0
Agricultural raw materials	8.9	7.0	5.6	4.6	4.0
Ores and metals	14.5	13.3	13.6	10.9	11.6
Fuels	27.5	25.6	15.0	9.5	8.2
Manufactured goods	0.7	0.5	1.0	1.5	1.9

Source: Based on data from United Nations, *Monthly Bulletin of Statistics*, New York, various issues; United Nations Conference on Trade and Development (UNCTAD), *Handbook of International Trade and Development Statistics*, New York, United Nations, various issues.

Table 2 shows the main commodities (other than petroleum) exported by Latin America. Some of them, such as orange juice, shrimps, temperate zone fruit and cut flowers, are of greater importance in Latin America than in other developing regions. Latin American countries are the world's leading suppliers of coffee and bananas, as well as very important suppliers of products such as sugar, soybeans and oil, sunflower oil and oil cake, and ores and metals such as copper and bauxite. Generally speaking, exports of most individual commodities are concentrated in a few countries.

2. The nascent industrialization process

After having applied industrialization policies based on import substitution, many Latin American countries now have a solid manufacturing base which differentiates them from countries in Africa and large parts of Asia. Countries which are endowed with such a manufacturing base as well as rich natural resources are in a good position to optimally exploit their natural resources by taking advantage of the linkages between the commodity and manufacturing sectors. The existence

of industrial infrastructure and an entrepreneurial mentality facilitates the process of incorporating technological innovations and adding value through processing in the commodity sector, thereby enhancing its contribution to the growth of the economy as a whole. In particular, the potential of the Latin American economies for incorporating technological progress would appear to be crucial for increasing the international competitiveness of their commodity exports.²

The above considerations lead to the more general notion that the role of commodities can be properly understood only by assessing the linkages between that sector and the rest of the economy, rather than looking at commodities in isolation.

² The idea that greater international competitiveness must stem from the deliberate and systematic absorption of technical progress is explored in ECLAC, 1990a.

Table 2

LATIN AMERICA: MAJOR NON-OIL EXPORT COMMODITIES
(1986-1988 average)

Commodities (SITC number)	Total Latin American exports (US\$ million)	Percentage of world total	Main Latin American exporters ^a
Coffee (071.1)	6 872.9	56.9	Colombia (17.3%) Brazil (16.4%) Mexico (5.2%) Guatemala (3.5%) El Salvador (3.3%) Costa Rica (2.8%)
Sugar, raw and refined (061.1, 061.2)	5 717.6	56.0 ^b	Cuba (45.6%) Brazil (3.4%) Dominican Republic (1.4%)
Fishery commodities ^c	3 030.4 ^d	10.9	Chile (2.3%) Mexico (1.8%) Ecuador (1.6%) Peru (1.2%)
Copper, refined and unrefined (682.11, 682.12)	2 517.9	34.7	Chile (28.4%) Peru (5.8%)
Oilcakes (081.3)	2 357.9	35.8	Brazil (20.2%) Argentina (15.1%)
Iron ore (281.5, 281.6)	2 118.6	29.8	Brazil (24.1%) Venezuela (3.4%)
Bananas (057.3)	1 372.8	72.1	Honduras (15.7%) Ecuador (14.5%) Costa Rica (12.2%) Colombia (11.6%)
Aluminium (684.1)	1 314.0	11.3	Brazil (6.4%) Venezuela (3.7%)
Soya beans (222.2)	1 092.7	17.9	Brazil (8.5%) Argentina (7.1%) Paraguay (2.1%)
Fruit juices (058.5)	888.2 ^e	-	Brazil (802.7 mn) Argentina (67.3 mn)
Bovine meat (011.1)	837.9	8.6	Brazil (2.8%) Argentina (2.6%) Uruguay (1.4%)
Tobacco ^c	619.9	15.5	Brazil (11.2%)
Coarse grains ^{c f}	605.7 ^h	5.4	Argentina (5.3%)

Commodities (SITC number)	Total Latin American exports (US\$ million)	Percentage of world total	Main Latin American exporters ^a
Copper ore (287.1)	604.4	25.7	Chile (14.9%) Mexico (7.4%)
Chemical wood pulp (251.7)	582.9 328.5	-	Brazil (328.5 mn) Chile (254.4 mn)
Silver (681.1)	571.5	-	Mexico (356.8 mn) Peru (122.6 mn) Chile (77.6 mn) Bolivia (12.5 mn)
Alumina (287.32, 522.56)	544.4	19.0	Jamaica (8.6%) Suriname (7.4%)
Soyabean oil (423.2)	517.5	35.0	Argentina (18.5%) Brazil (16.3%)
Cotton (263.1)	486.6	7.5	Paraguay (1.8%) Mexico (1.4%) Brazil (1.1%)
Cocoa products ^c	459.5	23.1	Brazil (16.0%) Ecuador (2.8%)
Cocoa beans (072.1)	449.4	15.2	Brazil (8.6%)
Wheat and wheat flour ^c	399.0	2.8	Argentina (2.7%)
Extracts of coffee (071.2)	353.0	-	Brazil (275.5 mn) Colombia (60.6 mn) Ecuador (16.9 mn)
Sunflower seed oil (423.6)	307.8	33.1	Argentina (33.1%)
Bauxite (287.31)	294.5	32.6	Jamaica (11.4%) Brazil (10.4%)
Grapes (057.51)	284.9	25.0	Chile (24.6%)
Tomatoes (054.4)	264.5	17.7	Mexico (17.4%)

Source: ECLAC (BADECEL) and UNCTAD, *Commodity Yearbook 1990* (TD/B/C.1/STAT.7), New York, 1990.

^a Figures in brackets indicate percentage shares of world exports or, when these are not available, value of exports in millions of U.S. dollars.

^b On the basis of physical tonnage, Latin America's share is 40%, with Cuba accounting for 23% of world exports, Brazil for 8%, and the Dominican Republic and Mexico for 2% each.

^c As defined in UNCTAD, *Commodity Yearbook 1990*.

^d Mostly shellfish (shrimps), exported mainly by Mexico, Ecuador and Brazil, and fishmeal, exported mainly by Chile and Peru.

^e Mostly orange juice.

^f Includes maize, barley, rye, oats and certain cereals.

^g Mostly maize.

3. *New orientations in development policies*

The linkages between the commodity sector and other sectors of the economy not only depend on technical factors (such as those underlying the technical coefficients of an input-output reverse matrix). To an important extent, they are also a function of the role that the commodity sector is called upon to play in the economy, which in turn is determined by the overall development strategy pursued by the country.

When import-substitution strategies focusing on the manufacturing sector were applied by many Latin American countries, commodity exports were seen mainly as providers of the foreign exchange needed to finance imports of those goods which could not be produced domestically. As from the 1980s, those strategies have tended to be replaced, in a growing number of Latin American countries, by policies aimed at liberalization of the economy and opening up to external markets. The emerging consensus in the region on the benefits of industrialization in the context of more open economies gives commodities an additional role: they now provide a base on which to build up processing activities that allow countries to combine international competitiveness based on natural resource advantages with industrialization. Such activities, because of their linkages with the rest of industry and services, not only heighten the value of resources, but also contribute to a process of technological and organizational change which strengthens competitiveness. The processing of commodities before export may therefore become a central element of the new economic development strategies now being adopted in the region.

4. *Market dependency*

Latin American commodity exports depend more than manufactures on the markets of developed countries: in 1986-1988, on average, those markets

absorbed three-quarters of commodity sales but only two-thirds of total Latin American exports. The two main markets for the region are the United States and the European Economic Community (EEC). The EEC is of greater relative importance as a market for the region's commodities, whereas the United States is the major market for the region's exports of manufactures. Thus, in 1989, 33% of the region's commodity exports went to the EEC and 22% to the United States, but in terms of total exports the order of importance was reversed: 38% went to the United States and 22% to the EEC.

The United States is, however, the main market for commodities exported by the Central American countries (with the exception of Nicaragua, although this could change in the future) and a few Caribbean countries such as the Bahamas. It also receives most of the commodity exports of Mexico and Ecuador. Most South American countries, as well as some Caribbean countries with traditional close trade links with the United Kingdom, depend more on the EEC as a market outlet for their commodities. Japan is the major market only for Venezuela, due to the importance of the latter's aluminium exports.

Because of this market reliance, great importance is assumed for the region by events which may influence the current situation and future evolution of trade relations with the United States and the EEC, such as the establishment of the Single European Market in 1993 and the prospects for bilateral and multilateral trade agreements under the Enterprise for the Americas initiative launched by the President of the United States in June 1990.

In contrast, developing countries, including those of Latin America, are only of marginal importance as markets for Latin American commodities, except for some exported by Paraguay and, to a much lesser extent, by some other relatively small countries such as Uruguay, Bolivia and Trinidad and Tobago.

II

Processing

1. *Commodity processing and economic development*

Processing commodities not only adds value to export goods, thereby increasing export receipts, but may also perform a catalytic function in the development of systems of production, transport, marketing and financing, ultimately increasing competitiveness in the production of goods and services with a greater technological content and characterized by more rapid demand growth. As noted by ECLAC (1990a), two key components of the linkage of the natural resource sectors with industrial systems which would benefit from the intensification of processing activities are the capital goods industry (in particular, the manufacture of specialized equipment and machinery) and engineering services. Both sectors are crucial for developing the domestic manufacture of more complex goods.

An example which could be cited in the mining sector is that of the supply industry for copper mining in Chile, which has generated the capacity to manufacture new equipment—drilling machinery and parts, service machinery and machinery for loading ore, etc.—and other specialized industrial goods, as well as experienced and fully competitive engineering services for projects in this sector (ECLAC, 1989a). Likewise, examination of experience in various countries of the region shows that those industries which receive inputs from agriculture have played a central role in introducing technical progress in the agricultural sector itself.

In addition to these general considerations of a strategic nature, even in its initial stages commodity processing may have other important advantages, depending on the particular commodities involved. For example, it may facilitate transportation, as the processed products are generally less bulky than the unprocessed ones (as in the case of metals and many agricultural commodities like cocoa);³ it may facilitate stockpiling, as in the case

of cocoa powder and butter, thus offering producing countries the opportunity to withdraw the product from export markets in periods of low prices; and it may help improve the negotiating position of producers, since the markets for processed goods are often more competitive than those for unprocessed ones, where there is a smaller number of buyers (as in the case of copper and other minerals).

Naturally, commodity processing is not economically feasible nor desirable in all cases. The availability of raw material in the country, for example, does not necessarily give a comparative advantage in processing, especially when the value of the raw material content is low compared with the value of the finished product (as for example in the case of tin ore in many final products and bauxite in aluminium). The merits of processing projects must be evaluated on a case-by-case basis, taking account of the advantages and disadvantages of the processing activities which are not reflected in the market prices. Appropriate incentives and policies need to be adopted in order to make returns correspond with social cost-benefit considerations.

2. *Possibilities and limitations of commodity processing*

A considerable proportion of Latin American commodities are exported in raw material form and processed abroad. In 1984, 64% of the total value of all agricultural commodities exported to OECD markets by the Latin American countries was accounted for by raw materials; semi-processed agricultural commodities accounted for only 16% of the total, and processed agricultural commodities for 20%. In the textile sector, exports of finished products only represented 22% of total exports. Exports of processed minerals represented a similar percentage of total exports of Latin American mining sector products (ECLAC, 1986a). The situation since then has not changed sufficiently to alter the conclusion that a great potential for processing export commodities exists in the Latin American countries. Specific processing opportunities were identified by ECLAC for the following major export

³ There are some exceptions. Transport costs are higher for soluble coffee than for coffee beans, and they are higher for refined sugar, which must be carried in bags, than for raw sugar, which is transported in bulk form. These higher costs, however, must be set against the higher value of the processed commodity.

commodities: coffee, cocoa, soya, sugar, cotton, natural rubber, bauxite, copper, iron ore, and wood. A number of obstacles that prevented this potential from being fully realized were found, however.

One well-known explanation of the low level of commodity processing in Latin American producer countries is the lack of investment funds and, in many cases, the poor macroeconomic environment. Indeed, the massive financial gap during the 1980s was a decisive constraint on investment, as the region experienced an unprecedented outward transfer of resources. Rising external debt service, declining terms of trade, and in some countries a lack of sufficient incentives to retain domestic capital and attract foreign capital help explain the sharp drop in the region's net investment coefficient from nearly 23% of gross domestic product in 1980 to 16.5% in 1988.

Yet it is very likely that more private investment could have been attracted to specific processing projects for export, were it not for a number of serious obstacles that stood in the way of the economic viability of the projects. Prominent among them are obstacles arising in the marketing and distribution of the processed commodities, and in their access to markets.

The obstacles to marketing are examined in section III. These obstacles usually affect processed products in particular. There are obvious difficulties hindering the entry of new participants because of the market structures, for example, in the cases of soluble coffee and chocolate, where brand names play an important role and new entrants are faced with the need for long and expensive publicity and promotion campaigns to make inroads in the market, and also for minerals such as bauxite, where a large portion of the industry, although less so than in the past, is vertically integrated to the semi-manufacturing stage. In the case of minerals, the conditions attached to the provision of finance for new mine projects often hinder the possibility of undertaking smelting and refining in the producing country.

The progressive nature of the tariff structures of the importing countries and the non-tariff barriers analysed in section IV likewise limit processing in the producer countries. By far the largest number of voluntary export restraint agreements, for example, are in the commodity processing sector, affecting food products, textiles and clothing, steel products and footwear.

3. Promoting the further processing of commodities in the region

For countries wishing to expand the processing of their natural resources before export, domestic resource allocation policies having this objective may be supplemented and made more effective through action to attract capital to processing projects and to contribute to their economic viability by tackling the obstacles mentioned above, especially through the measures suggested in other sections of this article.

In view of the importance which foreign capital has and will continue to have in the financing of natural resource based activities, a large number of Latin American countries have been or are in the process of reviewing their investment codes and regulations in order to facilitate and encourage foreign investment. Although these measures are undoubtedly a necessary condition for the entry of foreign capital, it would seem clear that they are not of themselves sufficient. Experience indicates that investments in this sector materialize when there is a well-defined and stable long-term strategy for economic development and structural change, clearly spelling out the role assigned to the processing of the country's natural resources and its linkages with the rest of the economy.

Multilateral financial institutions can also play a very important catalytic role in mobilizing external capital for commodity processing projects. These institutions have the expertise required to organize and manage the various stages in the projects, even though they themselves may only contribute part of the capital. They can provide "seed money" to finance prefeasibility studies, submit such studies to potential investors and providers of finance, and help work out the arrangements setting in motion the subsequent stages of the projects.

This could lead to the setting up of joint processing ventures between investors of producing countries and foreign investors—whether regional or extraregional. The association with foreign capital could also take a number of other forms, the suitability of which would depend on the technical and economic characteristics of the projects envisaged. Such forms could include setting up companies with capital from several countries (multinational companies) and establishing part-

nership links with foreign processors in the countries where the projected output is going to be marketed.⁴

This could allow advantage to be taken of existing regional complementarities in production, making use of existing installed capacity and of the technical complementarity existing between certain commodities in the manufacture of processed products. For example, in Brazil the capacity for soya processing substantially exceeds the domestic supply of the raw material, in contrast with the situation in Argentina and Paraguay, which are the other two major Latin American soya producers. Examples of technical complementarities are the use of sugar and cocoa in the production of chocolate; of natural and synthetic rubber in the manufacture of many rubber products; of tin and steel in the manufacture of tin plate, and of tin and various metals like lead, antimony, silver, etc., in the

manufacture of tin alloys; of sulphuric acid (a by-product of copper production) and non-metallic minerals in the chemical industry, etc.

Promoting commodity processing through regional cooperation may well require a reassessment of past approaches to industrial integration (as in the case of the experience with industrial programming). Although the initiative for the establishment of joint ventures currently tends to be left to the business sector,⁵ intergovernmental cooperation can be instrumental in identifying specific investment opportunities, as for example by the systematic collection and dissemination of information on investment opportunities at the regional level, the identification of potential investment partners, project formulation and assessment, updated information on overseas investment and promotion policies, and the organization of investment-oriented business meetings.

III

Participation in marketing

1. *The structure of Latin American commodity marketing*

Whereas in the 1960s and 1970s commodity production in Latin America increasingly came under the control of domestically owned companies, the crucial marketing and distribution sector has to a considerable extent remained in the hands of foreign firms. Fuller participation by Latin American countries in the marketing and distribution of their commodities would have clear advantages: it would allow the countries of the region to significantly increase their export earnings, because a substantial share of the income obtained from commodity exports is generated in the marketing and distribution stage, and it would permit closer contacts with final markets and enable producers to

take advantage of valuable information feedbacks from consumers as regards the product quality and specifications, presentation and packaging, etc., best suited to consumer tastes.

The limited participation of Latin American producers in the marketing of their products is connected with the structure of international marketing. The greater part of international commodity trade takes place through the marketing networks of big manufacturing and trading companies (ECLAC, 1986b). In particular, the volume of intra-firm trade by vertically integrated manufacturing corporations seems to increase with the degree of commodity processing. This is borne out by an examination of United States trade with affiliated or related companies, with evidence to this effect found in the cases of cocoa beans, cocoa butter,

⁴ Examples of joint investment of this kind are the investments by Venezuelan aluminium producers in fabricating plants in Europe, and the setting up by Brazil's *Companhia Vale do Rio Doce* (CVRD), together with the Japanese Kawasaki company and United States firms, of a steel processing plant in California which is supplied with steel plates from Brazil. Some Mexican steel processing firms have been negotiating their inclusion in the scheme as suppliers for the plant.

⁵ Asian developing countries, for example, facilitate the participation of the business sector in their instruments for regional cooperation. It is interesting to note that in the Association of South East Asian Nations (ASEAN) integration always relied particularly on external markets, as is now the emerging trend in Latin America. For a comparative assessment of some key issues in the area of industrial cooperation in Latin America and ASEAN, see UNIDO (1988).

powder and chocolate; live animals, meat and meat preparations; hides and skins, leather and footwear; and wood in the rough, furniture and processed wood.

The substantial resources and better market information of large trading companies puts them in a favourable position compared with their competitors, enabling them to take maximum advantage of commodity exchanges (the main medium of price formation for a large number of commodities), both by using risk management techniques (hedging) and by their better ability to anticipate changes in quotations. As many of these firms operate with a wide range of commodities, they can reduce the high risks in commodity trade due to price volatility and fluctuations in exchange rates. They also have greater flexibility in conducting their business: for example, they often trade commodities for manufactures and engage in counter-trade and other operations of various types which enhance their bargaining position vis-à-vis their trading partners.

In contrast, Latin American export firms are, except in a few cases, small and more numerous. Because of their small size, they do not have the necessary resources to cope with the price fixing practices of the big companies, economies of scale, product differentiation, and the large outlays needed for the necessary advertising or for gaining full access to market information. This affects their sales strategies and conditions, whatever the sales mechanism used: direct contracts, auctions or commodity exchanges. Indeed, Latin American exporters are generally absent from the latter. Only some large sugar and cocoa traders of Brazil, the Dominican Republic and Ecuador, and copper producers and exporters of Chile, Peru, Mexico and Brazil, regularly conduct business in futures. This limited participation is due, *inter alia*, to the fact that the usual size of the futures contract unit is more than the entire output of most individual agricultural producers and many small and medium-sized firms in the mining sector. Any significant reduction in the size of the contract unit would probably make the costs of trading in futures too high, as the average costs of these operations decline quite steeply with the volume of transactions.⁶

Lack of control of marketing is also related to the low participation of producing countries in the transport of their commodities. Since freight rates often account for a substantial share of the CIF price (as high as 20% for many commodities), Latin American countries are foregoing a large part of the value added in the transport stage. The region accounts for only 20% of all dry bulk tonnage of developing countries, which in turn have only 15% of the world total. This lack of shipping capacity, combined with sometimes inefficient national shipping companies and lack of port infrastructure and equipment, also leads to delays and limited flexibility to organize and plan deliveries, as well as to inefficient use of cargo space. The fragmentation of the marketing sector accounts for the region's weak bargaining position when negotiating freight rates with shipping companies.

2. Possible joint marketing strategies

In view of this situation of fragmentation, the position of Latin American countries could be improved by the consolidation of their export business, which would call for cooperation among suppliers. Such cooperation could take various forms, such as sharing market information, cargo space, brokerage services, or marketing services; making combined purchases of the material inputs needed for marketing, such as packaging material; and making joint investments in representation and sales offices, joint publicity campaigns, etc. in final consumer markets. Possible arrangements in these areas range from informal consultative mechanisms to joint export ventures.⁷

Producers' export cooperatives can be an effective instrument in this regard. The banana exporting cooperatives in Colombia and Costa Rica illustrate the effectiveness of this mechanism in raising producers' participation in marketing in an industry traditionally dominated by three large transnational conglomerates. Another example is the coffee exporters' federation in Colombia. The rich experience with export cooperatives in Latin

⁶ See Regúnaga, 1990a and b. Other studies carried out by ECLAC on these matters include: Menjivar, 1990; López Huebe, 1990; Bande and Mardones, 1990, and ECLAC, 1990b.

⁷ The need for joint marketing arrangements among small and medium-sized mining firms in Latin America is analysed in ECLAC, 1987.

America (such as those existing for various fruits and vegetables in Brazil, Chile, Guatemala and Honduras; for sugar and milk in Uruguay, etc.) could provide a base for expanding activities to international marketing. In some cases, a process of increasing cooperation could culminate in the establishment of multi-country Latin American commodity trading companies, preferably dealing in several commodities. This is an ambitious objective, however, and the Latin American record of operation of single-commodity, multi-country trading companies is not encouraging.

Where individual exporters' sales are too small to use hedging economically on commodity exchanges, they could reduce their risks through cooperative hedging schemes. By acting together, exporters of the same commodity could be jointly represented on the boards and relevant committees of the exchanges and see to it that the best interests of their industries are reflected in contract specifications, delivery rules, trading hours, and other institutional matters concerning exchange operation. This is particularly necessary in the case of perishable commodities, which face standardization problems more than metals do. At the same time, subregional economic integration could help to remove the obstacles to the establishment of regional commodity exchanges for certain products, such as are now envisaged, particularly for those commodities where subregional and regional demand is important. Such ex-

changes could help increase intra-regional trade (ECLAC, 1991a).

Private business cooperation in the field of marketing would be helped by government support at both the national and regional level. At the national level, such support could take various forms, including financial support when economically justified (for example, foreign exchange backing for margin calls to firms engaging in futures operations); the provision of services, including advice and information; and incentives in the context of domestic policies and regulations. At the regional level, cooperation among governments is needed in order to establish a common legal and institutional framework where individual companies can engage in fruitful contacts; such a legal framework should include matters such as national investment codes and regulations, export regimes, etc. Other fields for intergovernmental cooperation are market information and the training of the staff of exporting firms and governments in marketing techniques and strategies. Intergovernmental organizations such as UNCTAD have a clear mandate to promote actions in these two areas, and such actions would be considerably enhanced by the provision of financial support from the United Nations Development Programme (UNDP) and other sources of development finance. The large Latin American trading and exporting firms could also help their smaller counterparts, particularly in the field of on-the-job training.

IV

Market access

1. *Trade barriers in developed countries*

Latin American commodity exports are affected by various tariff and non-tariff restrictions at the borders of the main markets. Within these restrictions, tariffs are in many cases low or non-existent, but market access is nevertheless effectively controlled by non-tariff measures. The restrictions applied in the markets of the United States, the EEC and Japan are summarized below.

a) Tariffs

The tariff structures of these countries have various rates, applicable to different products. The rates are high for many agricultural products, and they generally show a tendency to be progressive, that is to say, they escalate with the degree of processing, giving rise to higher levels of effective protection for processed products than are indicated by the nominal rates. Such protection hinders

processing of these commodities in producing countries (UNCTAD, 1989). The negative impact of high tariffs on Latin American exports is attenuated, however, by the preferential access granted to many products under various systems of preferences.

The United States, the EEC and Japan give preferential treatment under the Generalized System of Preferences (GSP) to many commodities in raw and processed forms, the list of which is periodically modified, and such preferences are given to all the Latin American countries except Bermuda, Cuba, Nicaragua and Paraguay, which are excluded from the United States system. All United States GSP rates are zero. In other countries, rates applying to raw commodities are only significant in the cases of meat, coffee and tobacco in the EEC, and meat and grains in Japan. However, many products of interest to Latin American exporters (for example, fish, dairy products, grains, vegetables and fresh fruit, particularly seasonal fruit) are excluded from the system, and there is some degree of tariff escalation. This is so in the case of the GSP rates applied by the EEC and Japan to meat, fish, leather, cocoa and tropical fruit, and by the EEC to coffee, tobacco and sisal.

The English-speaking Caribbean countries have also been granted preferential access to the EEC market under successive Lomé Conventions between the EEC and the ACP (Africa, Caribbean and Pacific) countries. Tariff rates applied to eligible products are low or zero, but some tariff escalation exists for coffee, vegetable oil and tropical fruit. In addition, most imports from these countries (except Suriname), as well as those from some other Caribbean island countries and from Costa Rica, El Salvador, Guatemala, Guyana, Honduras and Panama, can enter the United States market duty-free under the Caribbean Basin Initiative (CBI). This treatment, which was initially for a 12-year period, is now indefinite. Commodities from these countries benefitting from duty-free access under the CBI but not the GSP include sugar cane, beef and veal, and certain fruit, flowers and tobacco products. But key industries such as canned tuna fish, footwear, certain leather and oil products, and textiles and clothing are excluded (clothing from fabric made in the United States is admitted under strict quotas). Sugar is admitted duty-free under the GSP and the CBI within the limits of country quotas, above which high, prohibitive tariffs are applied.

Duty-free access similar to that granted under the CBI is now envisaged for Bolivia, Colombia, Ecuador and Peru. GSP benefits applying to these countries had previously been extended by an Andean trade package to a number of additional products, including processed seafood, certain fruits and vegetables, wood, rugs and certain cotton products. Exports of some commodities from the four Andean countries are also granted preferences in the EEC in an effort to encourage diversification away from coca production.

b) *Non-tariff barriers*

A high proportion of Latin American commodity exports are affected by non-tariff measures which limit their access to some or all of the major markets. Taking the commodity trade by major product groups, food products are affected in all three markets (the United States, the EEC and Japan); oil-seeds and vegetable oils, mainly in the United States and Japanese markets; agricultural raw materials in the United States; and iron and steel in the United States and the EEC. Processed commodities such as textiles, clothing and footwear are also greatly affected. Taking into account the composition of the exports of the various Latin American countries, in the food sector imports from Argentina, Chile and Uruguay are most seriously affected; in iron and steel, those from Argentina and Brazil; in textile products, those from Mexico, Uruguay, Peru and Venezuela; and in clothing, those from Colombia, Venezuela and Mexico (Gonçalves, 1987, pp. 452 and 455).

The non-tariff measures most commonly encountered by Latin American commodities are quantitative restrictions (including voluntary export restraint agreements). But there is a wide array of other measures, too. In the agricultural sector, for example, meat, dairy products, sugar, tobacco, fruit and vegetables are most often affected by import quotas (global and bilateral), seasonal tariffs and quotas, discretionary import licensing, State monopoly of imports, sanitary and phytosanitary regulations, and outright prohibitions. Variable levies are also applied to ensure that the imported products are sold at prices not lower than the domestically produced equivalents. Although the significance of these barriers is less obvious than that of tariff barriers, it should not be underestimated. In the extreme case of sugar, for example, the tariff

equivalent of the import quotas imposed by the region's major industrial trade partners, as estimated by the US International Trade Commission, amounted to 102% in the case of the United States, 170% in the EEC, and 360% in Japan (United States, International Trade Commission, 1990a and b). But such border measures are only one component of the elaborate system of protection of agricultural producers in developed countries. Producer support schemes and large-scale export subsidies are the other two components which lead to the well-known situation in world markets, where excess supply of subsidized agricultural products depresses prices and displaces Latin American and other countries' exports of these products.

Regarding tropical products, anti-dumping and countervailing actions as well as quantitative restrictions are applied to flowers, plants and spices. Tropical fruits (including bananas) and nuts are subject to quantitative restrictions as well as taxes and other charges. Internal fiscal charges on sugar and selective taxes on bananas and tropical beverages such as coffee and cocoa are significant in certain countries. In the iron and steel sector, a combination of non-tariff measures is applied: principally voluntary export restraints, basic import prices, anti-dumping actions and surveillance measures. In 1986, nearly half of Latin American exports of these products to industrialized countries were thus affected. Other minerals, ores and metals face anti-dumping actions in the EEC and the United States. In addition, some products are subject to national quantitative restrictions or surveillance measures in individual EEC member States. In the textile sector, the restrictions imposed under the Multifibres Agreement affected around 64% of Latin American exports of textiles and clothing to developed countries in 1986.

2. Trade barriers in Latin America and other developing regions

In developing countries, market access barriers are generally high. An examination of tariffs and para-tariffs in 50 developing countries⁸ showed that in

⁸Erzan, Kuwahara, Marchese and Vossenaar (undated), *The Profile of Protection in Developing Countries*. The para-tariffs examined in this study consisted of customs surcharges and surtaxes, stamp tax, other fiscal charges, and tax on foreign exchange transactions.

1986 the import-weighted average of all import charges (tariffs and para-tariffs) in these countries was 30%. In Latin America, the level of protection was much higher: 66% in Central America and 51% in South America (but only 17% in the Caribbean). When major product groups were considered, it was found that manufactures faced the highest levels of tariff and para-tariff protection in the overall group of 50 countries. Foodstuffs came in second place, with a weighted average total import charge for all the countries covered by the survey of 30%. The average was 21% for agricultural raw materials, 19% for ores and metals and 16% for mineral fuels. For Latin American countries, the corresponding averages were much higher, reaching 64% on foodstuffs in Central America.

In the study in question, 40% of products were found to be affected by at least one non-tariff measure in all the countries in the sample. The most frequent non-tariff measures were quantitative restrictions, which affected 24% of all tariff lines. The second measures in importance were advance import deposit requirements, which affected 21% of products. Foreign exchange authorization by the Central Bank affected 6% of the tariff lines on average. In certain countries, however, particularly in Central America, all products were subject either to this constraint or to advance import deposits. Across regions, a pattern similar to that existing in the case of tariffs was found. The Caribbean countries were among those having relatively liberal trade regimes in this context, whereas South America was one of the most protective regions. Although these findings refer to all imports, they apply equally to the primary commodity sector.

The wide application of non-tariff measures to commodity imports in Latin American countries is also borne out by the findings of another study on the members of the Latin American Integration Association (ALADI) (Valenzuela, 1988). This study found that every major commodity is subject to non-tariff measures in some ALADI country. In 1988, Brazil, Colombia, Peru and Venezuela applied non-tariff measures to most commodities. Next in line came Mexico and Ecuador, with considerable import product coverage by such measures. Chile was in an intermediate position, while Paraguay, Argentina, Bolivia and Uruguay

had only limited recourse to non-tariff measures. In the year covered by the study, non-tariff restrictions were particularly important for such products as wheat, maize, powdered milk, rice, soya, soya oil, raw and refined sugar, petroleum products, some iron and steel products, fish, shellfish, butter, coffee, apples, pears and cotton. It should be noted, however, that many Latin American countries have undertaken significant opening-up of their import trade or are in the process of doing so.

3. *Some conclusions*

Trade liberalization in the markets of both developed and developing countries can contribute significantly to the expansion of many types of commodity trade. In view of the widespread use of non-tariff measures rather than tariffs to control imports, the reduction of tariffs alone would not lead to a significant increase in market access for commodities. Furthermore, if such a reduction were applied to most-favoured-nation rates, it could lead to a worsening of market access in some cases. This is because of the different trade regimes and degrees of tariff preference applied to different products and countries in the case of Latin America. Liberalization on a most-favoured-nation basis implies an erosion of these preferences.

This is well illustrated by the potential impact of offers of tariff concessions on tropical products made by developed countries during the Uruguay Round up to August 1990. According to UNCTAD estimates, the industrialized countries themselves would be the major beneficiaries of these offers (UNCTAD, 1990a). In the case of Latin American countries, exports to the United States would actually fall, although these losses would be more than offset by increased exports to other countries, mainly the EEC. Caribbean exporters to the EEC would suffer trade losses for this reason, however. Other UNCTAD estimates of the trade effects of a 50% reduction in most-favoured-nation tariffs on natural-resource-based products yielded similar results (UNCTAD, 1990b). Another particular case would be the situation of the net food importing countries, which might suffer losses in the short term from liberalization of agricultural trade.

This diversity of interests has important policy implications. Bargaining power would be increased and trade liberalization prospects enhanced if affected countries were able to negotiate collectively as a bloc, rather than individually. But developing a common stance is hindered by the potentially uneven distribution of benefits from trade liberalization.

In these circumstances, developing collective positions might be easier if the following considerations were taken into account.

Firstly, many analysts have noted the risks involved for developing countries in preferential systems which make them dependent on the goodwill of certain developed countries. For example, GSP benefits can be removed at the discretion of the countries granting them. They do not apply to many products of particular interest to Latin American countries, nor to non-tariff measures, which are more important obstacles to trade. Although the EEC's Lomé Convention is an improvement over the GSP, product coverage is still limited, and market access (outside the traditional export products) is restricted. There is little or no incentive to move up the product ladder from raw materials into semi-manufactured and manufactured products. Eligible countries may benefit from quota rents, but the role of dynamic comparative advantages is denied (Valdés and Zietz, 1990, pp. 7 and 8). The value of the CBI has been considerably increased by the recent decision to prolong the duration of the preferences given under it indefinitely, but as indicated above, important products continue to be excluded. In short, these disadvantages—which may become more apparent in the longer term—should be considered by decision makers along with the more likely short-term advantages of existing preferences when assessing trade liberalization.

Secondly, the diversity of interests of the Latin American countries may be reconciled within the framework of a generalized liberalization process covering a wide range of commodities, with special emphasis on the elimination of non-tariff barriers. Such an approach has made possible wide participation in the Uruguay Round based on the principle of globality, whereby concessions granted by a country in particular sectors may be more than offset by the advantages achieved in others.

V

The technological challenge

Technology has always played a leading role in economic development. Its effects make themselves felt in both the supply and demand of the commodities exported by Latin America. Some of these changes are well known and have been amply documented (ECLAC, 1989b and c).

1. *The impact of technological change on production*

Recent advances in production technologies have changed the patterns of international competitiveness.

Some producers have been able to use technological innovations to their advantage and thus counter the comparative advantages previously held by their competitors. This has been particularly clear in the mining and metalworking sectors. In these sectors, most of the new technologies currently in use emerged or were improved during the last decade, with the aim of saving energy in response to successive oil price rises, reducing operating costs and improving quality in order to face competitive imports. Producers introducing these innovations, particularly in developed countries, have been able to narrow their production cost differentials with Latin American producers who had long held a comparative advantage based on factors such as low labour costs and high-grade ores.⁹

In agriculture, various studies on the region support the view that the use of non-traditional inputs and technological changes have played a much more important role in raising output in this sector than other factors such as increases in acreage and manpower (FAO, 1989, pp. 47-48). Since the 1970s, the effects of the "Green Revolution" based on the adoption of high-yielding varieties of rice, wheat, maize and other crops, together with increased use of inorganic fertilizers and irrigation, have been felt particularly strongly. At present, the hopes of

achieving further increases in productivity, both in Latin America and in other parts of the world, are based on the research underway in the field of biotechnology, which has been given strong impetus by recent advances in such areas as genetic engineering, tissue culture and clonal propagation. The biotechnological revolution holds promise of a reduction in the dependence on agro-chemical inputs, leading to substantial cost reductions, a wider variety of goods suited to local production conditions and nutritional requirements, and a shorter time lag in the development and adoption of new varieties than in the case of the Green Revolution.

But on the other hand, a feature of the new biotechnologies which differentiates them from the Green Revolution is their predominantly private character. Whereas the major initiators of that revolution were public or quasi-public research organizations, biotechnological research is to a large extent conducted by transnational corporations.¹⁰ The returns on this research are private and the results are in keeping with the needs and interests of the owners. This involves certain risks for Latin American agricultural producers. Among these are the introduction of varieties whose cultivation calls for an increase in capital inputs together with a corresponding decrease in labour needs (as for example through the introduction of varieties with characteristics facilitating mechanical harvesting); the transfer of production to other geographical areas as varieties are introduced which can be cultivated in different climates; genetic uniformity, which makes plants highly susceptible to disease and pests; overproduction, and lower prices, from which only the largest producers who can afford to adopt the new varieties are likely to survive.¹¹ Moreover, some large agricultural and chemical conglomerates are engaged in research on new seeds which are tolerant to the herbicides produced

⁹ In the case of copper, for example, United States producers were able to cut average production costs from 85 US cents per pound in 1982 to 50 cents in 1989 (average production costs for Chile's State-owned CODELCO, the largest Latin American copper producer, are running at about 40 US cents per pound) *Latin American Commodities Report*, 6 June 1990.

¹⁰ For an analysis of the structure and production characteristics of the biotechnology industry, see Centre on Transnational Corporations (CTC), 1988.

¹¹ In the case of coffee, for example, these risks are examined in Rural Advancement Fund International (RAFI), 1989.

by those same companies.¹² It has been argued that, aside from environmental considerations, these kinds of plant varieties keep farmers dependent on the use of certain chemicals, thereby providing a captive market for the agricultural companies manufacturing the herbicides.

Some Latin American countries have successfully developed substantial research capacity in the field of biotechnology. This is illustrated by the operation of a number of highly capable organizations and programmes (such as the Genetic Engineering and Biotechnology Centre in Cuba, the National Institute for Agricultural Technology in Argentina, the Research Centre for Genetic Engineering and Biotechnology in Mexico and the Brazilian National Biotechnology Programme) as well as research centres operated by private firms.

2. The impact of technological change on demand

Demand for commodities has been affected both by the substitution of traditional categories of raw materials by new materials and by the reduction in the amount of raw materials used because of improvements in production processes and downsizing of the finished products. The aggregate effect of such changes is reflected in variations in the physical amount of raw material necessary to produce a unit of output. This amount has been termed the intensity of use of the raw material.

Studies on the evolution of the intensity of use suggest that for individual materials and countries, this intensity rises up to a certain threshold and then shows a declining trend as the economy matures. The evolution observed in the use of raw materials in the industrialized countries fits into this pattern. The same evolution could take place in the developing countries, where raw material use is currently increasing, but the intensity of use in these countries could be lower than that normally corresponding to their level of economic development, since they may be able to leapfrog the material-intensive stages of industrialization by adopting more up-to-date material-saving technologies.

¹² Research is currently underway on various crops such as soya, tobacco, tomatoes, cereals, forest trees, sugar beet and potatoes. The research on cotton has already given successful results.

In spite of these general trends, some traditional raw materials have regained ground lost to competitors, thanks to efforts undertaken by their producers (the cases of wool, cotton, natural rubber and aluminium are illustrative). In addition, some end-uses have registered important improvements in intensity (e.g., the use of copper in the electrical and electronic sectors). This underscores the importance of systematic research and development for the purpose of finding new uses and products.

3. The need to adapt to technological change

In order to cope successfully with the demands of technological change it is essential to apply measures to counter its negative impact and take the fullest advantage of the possibilities it offers for improving competitiveness.

A first requirement is the *monitoring*, on a continuous basis, of technological research and innovations everywhere in the world which have the potential for affecting commodities. This sort of information should provide an essential input for designing policies affecting the commodity sector (e.g., regarding pricing and diversification). Given the common interest of all producers of the same commodity in this information and the usual difficulty in obtaining it (companies are usually willing to share only general information about their research), the task of monitoring would be best undertaken, for each individual commodity, by organizations grouping together either producers or both producers and consumers.¹³

Secondly, the importance of selective research and development activities aimed at finding new uses and increasing the international competitiveness of exports is illustrated by the opposite fates suffered by aluminium, which has displaced other products in many applications, and tin, which has itself been displaced. In the aluminium industry, companies like ALCOA and ALCAN spend over US\$100 million per year on research and promotion, latterly concentrated on end-products. In contrast, research on the new and traditional applications of tin has mostly been carried out by the International Tin Research Institute (ITRI),

¹³ In Latin America, for example, the producers' organizations UPEB and GEPLACEA currently monitor development in technologies affecting bananas and sugar, respectively.

which has an annual budget of less than US\$5 million. With regard to competitiveness, empirical studies on developed countries have shown that in commodity-based industries such as food, textiles, wood, paper and mining, the correlation between increased productivity and research and development spending is greater than in other industries (Eglander, Evenson and Hanazaki, 1988, and Benavente, 1989, pp. 177-213).

Since research and development resources are not unlimited, they must be used in such a way as to achieve maximum efficiency, especially in countries which lack a "critical mass" of the human and financial resources needed for research. This could be achieved, first of all, by collecting and using these resources jointly at the subregional or regional level, through some public or private multinational organization which carries out research for the benefit of all producers. Secondly, it is essential that there should be strict allocation of resources on the basis of a technical analysis of the best opportunities; this often means that it is desirable to stimulate the transfer, dissemination and adaptation of technical advances already made in other countries. This can be achieved through the direct purchase of foreign technology, but it can also be obtained through foreign direct investment. The link between technology and investment is confirmed by examination of the innovations introduced in the mining and metallurgical sector in recent years, which shows that the main limitations on the adoption of many new technologies, at least in the primary processing stage of the metals industries, are due not so much to their complexity and lack of accessibility as to the need to incur large capital outlays. Therefore, forms of foreign investment should be promoted which make an effective contribution to the technological and managerial capabilities of the recipient economies.

However, in many cases local technological efforts are still required in order to adapt imported technology to local conditions or to promote technological innovation in selected activities and areas where such innovation is not simply a matter of imitation. For these reasons, research and development activities should be placed high in the ranking of priorities for development financing.

A third line of action is to seek access to new markets. A gradual expansion of commodity exports should be fostered towards those developing countries where the consumption of commodities is

likely to increase most in the future. In this connection, the possibility of increasing intra-regional commodity trade in Latin America appears particularly promising.

Some ECLAC studies suggest that such intra-regional trade could be expanded considerably. Calculations based on mid-1980s trade figures show that efforts to promote intra-regional trade in 47 products (at the SITC 5-digit level) might increase regional trade in commodities by more than US\$15 billion, of which US\$5.5 billion corresponds to non-oil commodities. The potential for increasing this trade was found to be particularly rich for such products as maize, wheat, sugar, soya and soya by-products, other oilseeds and oils, petroleum and petroleum products, aluminium, copper, and iron and steel.¹⁴ A recent meeting on the aluminium and tin industries in Latin America also found that there was a high potential for increasing intra-regional trade in these metals without adversely affecting trade flows towards the markets outside the region and without requiring new large-scale investments (ECLAC, 1989d).

Regional cooperation is particularly necessary to remove obstacles to the growth of intra-regional trade. Prominent among these obstacles are non-tariff barriers, competition from subsidized extra-regional producers, high transport costs, insufficient or inadequate regional marketing channels and networks, and a still low level of commodity processing in Latin American countries.

Finally, a number of factors influence the environment in which technologies are developed and introduced. For a number of commodities and end-uses, the nature of material substitution means that the functional relationship between price and demand is not necessarily reversible. In such cases, when a material loses a particular market on price-competitiveness grounds, the market may be lost for ever even after such competitiveness is restored. Wide price fluctuations lead users of commodities such as jute to seek synthetic replacements whose prices are more stable. Price stability at a remunerative but not too high level should therefore be a major concern for commodity producers, whether it is pursued through producer-consumer cooperation, producer cooperation alone, or other mechanisms.

¹⁴ The increase in intra-regional trade would come about by the displacement of extra-regional producers. See ECLAC, 1986c.

The experience with commodities like aluminium underscores the importance of keeping in close contact with the industry which uses the commodity as a substantial input. Research on new end-uses and functional properties can thus be oriented towards the effective requirements—both current and anticipated—of the users. In this connection, establishing more direct commercial links between producers and end-users appears essential. This can be achieved through greater participation by producers in marketing, as analysed in section III. Trade promotion activities are complementary to research on new products and end-uses.

Indeed, substitution is a fact of economic life. The overall economic setting has an important bearing on the technological process. The replacement of cane sugar, first of all by beet sugar and then by a new breed of sweeteners, was associated with protectionist policies in sugar's major markets. The oligopolistic structure that prevailed in the world textile industry played an important role in the substitution of synthetic fibres for natural fibres. Meeting the technological challenge therefore calls for action in several related areas, encompassing the production, marketing and market access of the commodities involved.

VI

The possibilities for Latin American cooperation in commodities

In previous sections, some measures were suggested for enhancing the contribution of commodity exports to national development objectives. In this final section, these measures are brought together and summarized, with emphasis on their practical implementation from the point of view of cooperation among countries.

1. *Agents for cooperation*

As indicated earlier, the new policy orientations emerging in the region encompass a trend towards the private sector playing a greater role in value-adding activities. While a debate exists on the appropriate scope and nature of government involvement, it is recognized that the State has a key catalytic role in facilitating and encouraging private sector activities, particularly in those cases where, because of externalities and market distortions frequent in the commodity area, market forces cannot be relied on to lead to effective use of resources. Governments, assisted by multilateral organizations, can play a crucial role in solving the problems referred to in earlier sections by taking direct measures such as those summarized below.

2. *Objectives and measures*

There are cross linkages between the measures suggested and the objectives identified for the vari-

ous areas. With regard to the objective of enhancing the contribution of commodity exports to the economic development of the countries of the region, the various measures are related directly or indirectly with one or more of the following instrumental aims: increasing productivity; expanding market outlets for commodity exports, including the expansion of intra-regional trade; increasing the participation of producing countries in marketing and distribution activities; and expanding the processing of commodities before their export. The suggested measures may be grouped under the following headings:

a) Development strategy for regional resources

Actions under this heading would include: i) assistance from financial institutions in the design and evaluation of processing projects, especially joint-venture projects, and ii) the collection and dissemination of information on opportunities for joint-venture investments in commodity processing. The final goal is to facilitate commodity processing before export.

b) *Actions to promote trade liberalization*

These include: i) developing a common stance to negotiate the reduction of trade barriers in developed country markets; ii) removing barriers to trade in the context of regional integration agree-

ments, and iii) reducing barriers to trade with other developing regions by, for example, expanding the Global System of Trade Preferences among Developing Countries. This would contribute to the objective of expanding market outlets for raw and processed commodities, thereby facilitating processing before export.

c) *Joint marketing strategy*

This broad heading covers actions such as: i) the sharing of market information on individual commodities; ii) cooperative training in marketing, and assistance in this field for small Latin American firms from large firms and appropriate organizations; and iii) helping exporters to develop joint marketing arrangements in a variety of forms. Such actions would facilitate greater participation in marketing and distribution and an expansion of market outlets.

d) *Common legal framework*

Governments should harmonize legislation affecting operations by firms, particularly under joint ventures, in marketing and in processing, so that these are not handicapped by differing and conflicting laws and regulations in different countries. This action appears necessary in order to remove obstacles to cooperation in marketing and processing.

e) *Joint research and development efforts*

Although research and development efforts by Latin American firms and governments cannot match those made in developed countries, their efficiency and returns could be greatly enhanced by selectively focusing and pooling them, as indicated in section V above. Cooperation in this area would help to increase productivity, expand market outlets by finding new uses, and facilitate processing to the extent that it is now hampered by the unavailability of suitable technology.

f) *Price stability*

This would help to discourage the commodity substitution which adversely affects Latin American exports. Actions under this heading should be tailored to the particular situation of the commodities concerned. Commodity agreements between producers and consumers may work for certain commodities (as they have done at certain

times in the cases of coffee, cocoa and natural rubber, and might in the case of oil). Producer cooperation in supply management may work in other cases (as for example those of oil and tin). At all events, the level of prices at which stability is maintained is crucial to the success of these efforts. This level should not be excessively high, as otherwise substitution will be encouraged rather than reversed, and it should correspond to long-term market trends.

3. *Implementation*

The effective implementation of the actions indicated above may crucially depend on the Latin American countries' leverage in international negotiations, as well as on their ability to foster suitable institutional mechanisms through intergovernmental cooperation.

a) *General negotiating strategy*

As was indicated some time ago in previous ECLAC documents (ECLAC, 1987b and 1983), past international cooperation between commodity producing and consuming countries has not yielded the expected results, nor has it led, in most cases, to a substantial improvement in the performance of the commodity export sector in Latin American and other developing countries. In spite of this, international dialogue and negotiation remain indispensable in the context of a world economy where interdependence among countries and sectors is constantly growing.

The piecemeal approach to commodity negotiations has in all probability been largely responsible for the lack of success of past efforts. Although UNCTAD's Integrated Programme for Commodities embodied the notion of globality of interests within the commodity sector in order to try to overcome the weaknesses of individual commodity approaches, subsequent developments such as the Uruguay Round have proved that a still wider perspective is necessary. This perspective corresponds, at the international negotiating level, to the view at the national level that the commodity sector is a component of, and is linked with, the overall economy. In the same way that effective domestic policies should try to take advantage of these linkages, so an effective negotiating strategy

should build on the interdependence existing at the international level. This implies relating problems in the commodity area to problems in other areas, such as debt and finance, trade in manufactures, services, etc.

Linking commodity issues with other matters on the basis of existing interdependencies would allow the Latin American countries to strengthen their collective bargaining position, enabling them to negotiate on a more equal footing. This type of linkage has provided the foundation for the Uruguay Round of multilateral trade negotiations and has made universal participation in that Round possible. Such an approach requires the identification and extension of negotiations to those elements which are of interest to all the parties, such as access to Latin American domestic markets, the effects of commodity production on the environment, health issues, and the production and sale of illicit drugs, all of which are highly relevant for Latin American countries as well as for the international community.

b) Institutional mechanisms

i) *Producers' organizations.* These are ideal mechanisms for cooperation in most of the areas indicated above. Examples in Latin America are the Union of Banana Exporting Countries (UPEB) and the Group of Latin American and Caribbean Sugar-Exporting Countries (GEPLACEA). These groupings are involved in activities covering most

of the issues indicated, and have recorded positive results in some of these areas. Although fully-fledged producers' organizations may not be feasible for all commodities, other kinds of institutional mechanisms for consultation and co-operation among producers may be envisaged, including consultation mechanisms on specific issues.

ii) *Integration schemes.* In recent years, there has been a reactivation of efforts towards economic integration in Latin America, favoured no doubt by the evolution towards more open trade regimes. Integration is no longer considered a substitute for the liberalization of trade with the rest of the world, but rather a means of strengthening a competitive base from which to penetrate world markets. The prospects for trade liberalization arising from current integration plans are encouraging from the perspective of promoting intra-regional commodity trade, although there may be some diversion of trade resulting from bilateral agreements that may be concluded (such as the Enterprise for the Americas). In this context, there is a good opportunity to consider broadening the integration mechanisms to cover some of the actions indicated earlier in this article. This would mean reassessing past instruments for integration adopted in the region, particularly with a view to incorporating the private sector more effectively.

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The role of the State in technological progress

*Ricardo Mosquera Mesa **

The starting point for this article is the link between knowledge and the production of goods and services. After an analysis of the characteristics and dynamics of that link, the role of the State in the development of particular lines of technological research is examined.

It is pointed out that in order to define a development strategy which takes into account the technological factor, it is necessary to establish effective specific policies on scientific and technological production in itself and in its political and State dimensions.

The case of Colombia is then analysed. The author holds that in that country science and technology have not received priority attention at the general level or, in particular, in the industrial sector, and he then goes on to review various situations and problems for which technology offers solutions fully in keeping with national development.

Instead of going along with the option of passive adaptation to the international division of labour, a selective position with regard to development and modernization of the economic base is proposed and it is suggested that the role of science and technology in development should be reformulated.

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Introduction

Four decades after the formulation of ECLAC's diagnosis on Latin American economic development, some structural problems of the region not only still exist but have even got worse; furthermore, other factors have appeared on the scene which make it more difficult to "take off" in the economic sense, and at the international level new alignments have taken shape and new economic blocs have appeared. What role can Latin America play in this new international order? Is it true that we are now "on our own", as some analysts suggest? With whom, and with what prospects, can we align ourselves? What are our relative advantages today? What are our greatest obstacles? Against this background, the question that arises is what kind of new model countries like Colombia should adopt to tackle the opening-up process, and what role science and technology should play in it.

I

The links between knowledge and production

In the manufacture of a product, the added value which it incorporates includes an increasingly high component of complex work, due to the use of technologies which call for more highly developed levels of knowledge.

It is widely recognized by experts and leading authorities that an increase in production in absolute terms is not enough to give grounds for considering that the battle for sustained economic growth has been won. The essential thing is to raise productivity through the appropriate incorporation of technological advances in the entrepreneurial sector, since if this is not done, then the low levels of competitiveness will weaken any development policy and make the economic system extremely fragile.

Cutting across ideological frontiers, valuable lessons can be learnt from the experience of perestroika as promoted in the USSR by Gorbachov, who recognized that many of the ills affecting the Soviet economy were due to the slowness with which technological processes were applied, so that they only entered the production apparatus in the long term. "For many years, our policy has been to build

more and more enterprises. The construction of workshops and administrative buildings absorbed enormous sums of money. Meanwhile, however, the enterprises remained at the same technological level" (Gorbachov, 1987). It is worth noting that although the Soviet Union invented the continuous casting of steel, 80% of the production of other countries was carried out with this method, whereas the USSR used it to a very much smaller extent. This situation was summed up concisely by the Soviet leader when he said: "In our country, the road that a scientific discovery has to travel before it enters production is far too long" (Gorbachov, 1987). In the final analysis, it seems to be beyond all doubt that the conveyor belt that connects research with production should operate with a sufficient degree of flexibility in both directions, since otherwise the economy becomes stiff in its joints and the process of seeking new knowledge may be impaired also.

In contrast with the research carried out in most of the developed countries, which is directly related with social and production sectors, in our countries there is a marked separation –if not an impassable gulf– between research and the active sectors of the economy. In the rich countries, the distance between the laboratory and the production line is shorter and shorter; in our country, in contrast, these two sectors are disconnected because of a state of dependence which we have not yet managed to overcome completely. Even though the quality of the research itself may be just as good as that carried out at the international level, the feeble links which exist with the sectors promoting development mean that in our environment the results of scientific activity are still uncertain and there is no shortage of those who believe that our researchers are simply incapable of producing real science and technology.

When we speak of the links between knowledge and production we are recognizing that the university cannot be viewed as a kind of ivory tower where professional researchers speaking unintelligible jargon lay the foundations for a type of scientific culture which the rest of the country must simply consume without question. The university must strengthen its links with the nation and with

the political and entrepreneurial leaders from whom it has traditionally been distant, and it must help to overcome mutual misgivings which make it more difficult to put projects into operation and which create a climate of mistrust that hinders the work of research. We cannot continue to permit a university cloistered in an academic world which looks down on both politics and business administration but ends up being crushed by them. Technological innovation and scientific discovery cannot continue to think along lines divorced from the production processes, since the latter are in fact a fruitful field where they can show their effectiveness and fertility. The academic world must overcome its scholastic outlook and its unjustified arrogance and seek meeting points with private and State initiative at both the national and regional levels.

Although as a general rule the research projects carried out in universities include among their objectives the application of their results to the solution of some national problem, in spite of the best intentions of the researchers this objective often falls by the wayside. This prevents the integration of the knowledge in question into the development of the country, although of course this also depends on the market and entrepreneurs who still tend to lack confidence in national effort and talent. It is frequently complained in loose terms that the cause of this and other failures is "lack of resources", thereby invoking the paternalism of the State or of the institutions responsible for receiving and processing proposals. While recognizing the marked shortcomings in our means of giving official support to research and the need to institutionalize suitable infrastructure for permitting scientific and technological progress, we feel that this phenomenon needs to be analysed in greater depth, since by uncritically appealing to State paternalism we could easily emerge from foreign dependence only to fall into a state of bureaucratic dependence. Moreover it is quite possible that the desired convergence between production interests and national researchers may not come to fruition if both sides continue to have a dependent mentality which stands in the way of original opportunities for uniting production and knowledge.

II

The role of the State

In respect of research and development activities, the State must adopt a leading role in promoting specific lines of research and technology. This also implies a change of outlook among researchers, in the sense of playing a more active role in seeking mechanisms for putting their projects into effect. Thus, in the first phase, with the aim of establishing general conditions for developing research, active State intervention is needed, particularly when what is involved are advanced technologies that make intensive use of scientific knowledge and its practical application.

As emphasized in a report on the recent evolution of spearhead technologies such as informatics, biotechnology and bioengineering, the public sector has had a distinguished role to play in some stage or other of their development. "The reasons for this role of the government sector are varied and include the following: a) advanced technologies are usually the result of lengthy R&D processes often requiring large-scale financing that only the government can furnish either because of its size or because of the uncertainty and risk associated with such investments; b) some of these technologies are deemed important for national security and therefore the government reserves to itself certain powers to control their development and possible diffusion; c) government action is also usually justified because these new technologies are assigned major potential as catalysts of the growth of specified economic sectors and therefore can play a strategic role in economic development policies" (IDB, 1988, pp. 199-200).

The need to establish a scientific and technological base also implies a need for foreign cooperation. This means opening up the country to various forms of investment, while however using the technologies in a judicious manner, rejecting easy solutions such as dependence and instead forming a body of researchers who are unashamedly scientific entrepreneurs rather than mere new kinds of wage earners. We see the university as a source of new knowledge and a privileged intermediary

between knowledge and the groups of innovators who are seeking to expand the frontiers of production. For this reason, academics cannot limit themselves to proposing processes to increase productivity from an abstract standpoint, overlooking special regional and cultural features and political and administrative aspects which are of fundamental importance for furthering the objectives of change. A great effort must be made to shorten the distance between those who are carrying out research and the possible beneficiaries, since research cannot operate on a unilateral basis. What is needed is a suitable environment: an academic culture which generates a suitable environment for the development of research processes, and this involves very heavy investment in human resources. As the President of Venezuela said at a recent ECLAC meeting: "education is clearly the great strategic line along which we must advance, because it is the gateway to research, science and technology" (Pérez, 1990, p. 13).

The university must train integral researchers who are not afraid to tackle the management aspects of production: true scientific and technical cadres with a commitment to their nation, their people and the fundamental changes which must take place in the economic and social structure of our countries. These professionals will act as vehicles for the democratization of knowledge, as intermediaries between technological development and those directly concerned with the production of wealth. There is an urgent need to promote cooperation between the universities and the enterprises by building bridges which will lead to greater facilities for giving life to infant enterprises and technology parks and by creating a project bank to carry out promotional and external relations activities to help identify sources of financing and implementation mechanisms. For this purpose, in both sectors it is necessary to identify possibilities for joint action to facilitate the selection, assimilation and adaptation of scientific and universal knowledge which will help to lay the foundations for our own creative processes. This programme

can only be pushed ahead if there is the fullest knowledge of the realities of the country and a scientific and technological outlook is attained

which ensures a smooth road to development and makes it possible to take the necessary political and administrative decisions here and now.

III

Phases in scientific and technological development

In order to move on from the general intention of promoting a form of development supported by science and technology to the actual implementation of such development it is necessary to carry out a collective diagnostic exercise and review processes and achievements in order to determine exactly what changes should be sought both at the domestic and at the political and State levels. Although there is general agreement that it is a matter of urgency to establish a scientific and technological project for Colombia, for example, and although we do not hesitate to assign to universities and other research centres a key role in the formulation of that project, the difficulties arise when it is necessary to define the various steps that must be taken: it is then that it is essential not to fall into the trap of seeking utopias or making general declarations: instead, it is necessary to establish policies and formulate plans which will win the confidence of the various sectors of the nation.

Before examining the need to reformulate our own development model, it is necessary to make a summary outline, within a new political context, of what has happened in recent decades in the developed countries. In those countries, science and technology have been incorporated into industry and into urban life styles through a process in which three phases may be distinguished:

- i) In the first phase, from the end of the Second World War (1945) until 1960, scientific and technological policy was dominated by considerations of so-called national security and military power. Prestige was attached to research in physics, nuclear physics, and space sciences. In that period –more exactly in the mid 1950s– J. D. Bernal (1954) coined the term “scientific revolution”. Ten years later, the concept began to win wide dissemination with the

publication (in Czech) of “Civilization at the crossroads”, by Richta Radovan, followed by another study by the same author, “The scientific revolution and the options for the revolution of today”: a work which unites the aspects concerned with science, technology, economic development, labour, artistic and educational considerations, systems of direction and organization, and ecological and social matters (Corona Triviño, 1989).

- ii) The second phase, from 1960 to 1973, was the era of the space race, the end of the decolonization of Asia and Africa (national liberation movements), and the emergence of Japan as an economic power. There was an optimistic and hopeful attitude to science and technology, which were given a very special place in economic growth. The scientific and technical revolution embraced a whole series of principles: automation, which involves cybernetics and opens up the way to computerized control centres; chemicalization, whereby matter itself is continuously transformed by its own laws; the application of biotechnological processes which involve the use of microorganisms for the transformation of matter, and the use of renewable sources of energy and nuclear and solar energy to satisfy the new needs in this field. These changes are based on a process of qualitative change in which science comes before technology and the latter comes before production. Consequently, science becomes a prerequisite for technical and productive progress: that is to say, it becomes a component of the productive forces of society.
- iii) The beginning of the third phase may be set in the 1970s, having as its background the events of May 1968 in France, the Cultural Revolution in China, the end of the Vietnam war, the consoli-

dation of the Organization of Petroleum Exporting Countries (OPEC), the definitive establishment of Japan as a leading industrial power, and the economic decline of the Western countries. As from the early 1970s, there were clear signs of the exhaustion of the capitalist development model in both the developed and the under-developed countries. The Welfare State entered into crisis, and with it its Keynesian-Fordist axis. It received its coup de grâce with the oil crisis of the mid-1970s, brought on by OPEC's pressure to raise oil prices (a situation which suggested the need for a fundamental rethinking of the whole situation).

We shall now analyse the process which gave rise to this last phase and the way in which the world is linking up with a new paradigm in which science and technology must be the main actors.

State interventionism, which arose as a response to the crisis of the 1930s, based its actions on the monetary and fiscal policies advocated by J. M. Keynes as fundamental elements for overcoming the crisis. By virtue of the principle of effective demand, this approach gave rise to the view that the State should operate as an active economic agent whose functions included helping to maintain levels of income such that, through the corresponding demand, they would induce sustained growth of the economy.

In order to implement this approach, institutions and economic policies appeared on the scene whose object was to protect or raise wages (social security, minimum wages, etc.). This was the response at the macroeconomic level.

At the entrepreneurial level, Taylorism-Fordism was responsible for linking the production relations with the macroeconomic elements. This gave rise to a regulatory apparatus which operated as a unitary whole within the framework of the international division of labour and later of the *New Deal*.

This scheme, which gave rise to the import substitution model in Latin America –applied perhaps most forcefully in Colombia– fulfilled its objectives for a time, but then gradually began to act as an obstacle to the formation of the driving element of the whole system: that is to say, capital.

There were various reasons why this scheme ceased to be organically functional. The international division of labour which arose after the Second World War was very different from the

preceding one. The developing countries ceased to be exclusively exporters of raw materials and began to export also manufactures incorporating some content of technology. Furthermore, there was the emergence of highly technified and very competitive economies such as those of Japan and, to a lesser extent, other Southeast Asian countries.

The crisis in the economic leadership of the United States, particularly in the production of high technology, the generation of employment and investment in productive activities, also contributed to the gradual erosion of the prevailing scheme and the formation of new power megablocs: the United States and Canada; Japan and the "Asian tigers", and the European Common Market with a unified Germany and the possible cooptation of the former USSR.

The new technologies –biotechnology, micro-electronics, agronics, etc.– were also factors of disintegration, especially of Fordism, assailed by "porosities" and "rigidities" which hindered the accumulation process.

The new model aims to recover the rate of capital accumulation and strengthen the capital/labour ratio within an environment where the process of technical innovation is increasingly rapid, generates new processes and products, and demands greater flexibility on the production line. In this context, technological innovation plays an important role: indeed, competitiveness is based on it.

In the mid-1970s, the first institutions for fostering infant enterprises with a technological basis and total quality programmes began to operate, and there was a general spread within big enterprises of processes of technological research and development largely financed, according to A. Eischner, with price rises made possible through the oligopolistic position of those megaenterprises.

The generation of big economies of scale was based on the globalization of the economy, which, backed up by a new division of labour, sought to apply the model on a world scale.

The systematic use of science in the pursuit of greater well-being for society began in the 1950s when –as already noted in our description of the first phase– elements of international competition emerged (the space race, informatics). In terms of what the history of human progress calls the march of time, authors such as Daniel Bell and Alvin Toffler summarized economic and social evolution in the manner shown in table 1.

Table 1

ECONOMIC AND SOCIAL EVOLUTION

	First wave or pre-industrial society	Second wave or industrial society	Third wave or information-based society
Key resource	Land	Machinery	Knowledge
Dominant sector of economy	Agriculture	Industry	Services
Social groups	Peasants/landowners	Workers/entrepreneurs	Consumers/technocrats
Dominant technologies	Agriculture	Energy and processes	Informatics, telematics, robotics, biotechnology, new materials
Era in history	30th century BC to 18th century AD	18th century AD to 1950	1950 onwards
Economic development	Linear, moderate	Exponential, conflictive	Asymptotic, balanced

Source: Daniel Bell and Alvin Toffler.

Although in the early 1970s the economic crisis gave rise to a certain disenchantment regarding science and technology, this attitude changed in the 1980s, when the countries which had made big investments in technological research and development

obtained excellent results which were reflected in high and sustained economic growth, technological advances that gave them a leading position, a big expansion in their share of international trade, and increases in the value added in their products.

IV

The situation in Colombia

Colombia has not given priority attention to science and technology. This is clear from the conclusions of the mission on science and technology which analysed this topic.¹ Expenditure on science and technology as a proportion of total central government expenditure was 1.29% in 1980 and 1.37% in 1988, while over the same period, as a percentage of the gross domestic product, it went up from 0.16% to 0.19%. These figures are substantially inferior to those of other Latin American countries such as Brazil, Mexico, Chile or Argentina, where they are two or three times higher.

¹ See FONADE/DNP/MEN/Universidad Autónoma de Colombia, 1990.

The picture is even more discouraging if we look at the evolution of the industrial sector. The model adopted, which was based on import substitution, did lead to the development of industry, but at the same time it heightened the agricultural export and protectionist structure. This permitted the emergence of a type of industry characterized by a high degree of fragmentation of production and high levels of idle capacity (FONADE/DNP/MEN/Universidad Autónoma de Colombia, 1990, p. 32).

Industrial production, for its part, shows high indexes of concentration. These are due to structural characteristics connected with a small domestic market and investment policies which have chan-

neled surpluses towards the financial accumulation cycle. Thus, although the concentrated industrial sectors have very good indexes of economic performance, in the long run these policies hinder industrial development. Consequently, the oligopolistic enterprises have used their profits and indebtedness to buy existing enterprises rather than to expand their own production capacity.

Over the period 1979-1986, gross production grew in real terms, with recessions in 1973-1975 and 1980-1983. Added value and domestic consumption registered similar behaviour. Labour remuneration grew steadily between 1974 and 1983, but as from the latter year it did so more slowly, and there was also a decline in employment and in the number of establishments. Although some parts of Latin America have a solid industrial base which puts them in a better position than the African countries and extensive areas of Asia (in 1988, exports of manufactures accounted for more than one-third of total exports in Latin America as a whole, while in Brazil and Mexico they amounted to 51.7% and 43.2%, respectively), in countries like Colombia the figure barely reached 16.1%, thus showing their heavy dependence on commodities (ECLAC, 1991).

In general terms, the industrial structure by sectors has not registered substantial changes. In 1986, the composition of production was as follows: non-durable consumer goods, 44.2%; intermediate goods, 43.3%, and metal products and machinery only 12.6%, of which the machinery and equipment branch accounted for 4.7%.

If we examine the links with technology through: i) imports of capital goods; ii) purchases of patented technologies; and iii) technologies put into operation by various enterprises, we see a notable drop in the industrial sector's share in imports of capital goods, from a peak of 50% at the beginning of the 1980s to 40% in 1984.

The share of manufacturing in total payments for technical services went down from 30% at the beginning of the 1980s to only 8% in 1988. The sectors accounting for the biggest shares of these payments were the manufacture of paper and paper products, printing and publishing, which accounted for nearly 35% of payments by industry between 1976 and 1988, followed by the manufacture of chemicals and chemical products derived from pe-

troleum, coal, rubber and plastics, which together represented a little over 10% of total payments during the period.

Payments of royalties, in which industry had an important share, went down considerably during the 1980s. The two sectors which accounted for the biggest shares of these payments were the manufacture of metal products, machinery and equipment (nearly 30% of total payments) and the manufacture of chemical products (nearly 40%).

The reduction in payments for royalties and technical services may be an indication that industry does not make much use of these forms of incorporation of technological innovations, or that because of the restrictions which exist other ways of making such payments are used. In order to analyse the impact of royalties on the industrial sector it is worth noting their share in added value: after having accounted for 1% in 1970, they went down to 0.30% by 1986, which is in line with the decline in payments and confirms the sluggishness of the incorporation of technology.

In its analysis, the mission on science and technology notes that "in contrast, the share accounted for by interest is increasingly important, and in 1986 it was twice the level of 1970. It would appear that a large part of the surplus generated by the sector has been directed towards financial payments rather than expenditure on technological modernization" (FONADE/DNP/MEN/Universidad Nacional de Colombia, 1990).

The behaviour of capital formation confirms the slow growth of the capital stock of the economy. According to this mission, "if we start from the assumption that there is a high degree of correlation between investment and technical change, it may be said that, at least during the last decade, the introduction of new technology in this way has been limited. This situation is particularly critical in the case of the agricultural sector" (*ibid.*).

If, in the case of Colombia, we look at the characteristics corresponding to the third phase, it may be noted that in the industrial sector there have been great changes in the skills of the staff, and greater linkages of professionals and technicians are to be observed, together with more and better specialization of functions. These changes are most evident in the areas of chemicals; chemical, electrical, industrial, mechanical and metallurgical engineering; electronics and informatics, and business administration.

This is a basic element in the process of industrial technological innovation, which in turn is essential for the restructuring of the sector and is the heart and soul of the process of greater economic openness which has been put into effect in Colombia since the beginning of the term of office of the present government.

With regard to the agricultural sector, the traditional model of a dual economy has been changed through the strengthening of medium-sized holdings oriented towards modern agriculture. Nevertheless, the increase in agricultural production has been due more to the expansion of the area cultivated than to an increase in yields. The higher yields registered have been due to the greater use of improved seeds and machinery, together with heavy investments in irrigation and land improvements (basically for commercial crops such as oilseeds, cereals and sugar).

In the Colombian agricultural picture, there are two critical elements: land use and land conservation. According to a study made by the Agustín Codazzi Geographical Institute (1987), only 4.6% of the total land area is used for crop farming, 51.5% consists of forests, and 35.1% is used for pastures, which reflects poor management of the land resources. In addition, it is necessary to bear in mind the serious deforestation being suffered by the country, which is only exceeded by that in Brazil and Indonesia.

Raising agricultural production involves not only strengthening the present scientific and technological structure but also eliminating the barriers which exist, including the impossibility of gaining access to land of good quality in good locations, the lack of infrastructural works (irrigation districts) and the oligopolistic prices of agro-chemical inputs. Technological research and development in the sector have been marked by the dissemination of the procedures of the international strategy known as the "Green Revolution".

With regard to spearhead technologies, the advances made in molecular biotechnology and tissue culture open up opportunities, though they also raise some important problems which are a source of increasing concern to the leaders of agricultural research in Third World countries. Some of the applications of genetic engineering which are of particular significance for countries whose agriculture is in a process of development include the im-

provement of tolerance of drought, nitrogen fixation, improving the efficiency of photosynthesis, and the use of monoclonal antibodies to identify viruses and reorder matter. The applications of tissue cultures include the cleaning up of tissue diseases, the rapid multiplication and *in vitro* storage of clonal material, increased genetic diversity through somatic variation, and the use of other cultures to accelerate the process of genetic improvement, especially in climatic zones where it is only possible to grow one generation per year (Nickel, 1989).

The high cost and degree of private ownership of this type of research raise fears that the developing countries may lag behind the capitalist countries and transnational corporations and will finally have to buy this technology. This fear is accompanied by recent decisions such as that permitting the patenting of genetic engineering material. Only big agricultural research systems which can invest enormous resources in this field could achieve success in it, and even so there are many risks (CTC, 1988).

The big commercial firms may only be interested in crops and animal products which have a big market, so that products aimed at solving the problems of the developing countries, and particularly those of small producers, might not be benefited by biotechnology research processes. Some Latin American countries have set up institutions such as the Centre for Genetic Engineering and Biotechnology in Cuba, the National Institute of Agricultural Technology in Argentina, the Centre for Research into Genetic Engineering and Biotechnology in Mexico, the National Biotechnology Programme in Brazil, and the Institute of Biotechnology in the National University of Colombia. The technological challenge in these areas is difficult, however, since the rapidity of the changes taking place calls for great dynamism of the production apparatus and responsiveness to technological progress in order to improve competitiveness or, at the least, be able to act as rational consumers of technology.

For countries such as Colombia, this is an important challenge which obliges the country to adopt a research strategy and try to ensure that technological innovations help to solve social problems rather than make them worse. Most of the

agricultural areas of the developing countries are in the tropics, and peasant pressures push activities towards the most fragile ecosystems, in marginal conditions for sustained production. This emphasizes the need for the environment to be taken into account in all strategic research.

What is needed in the Latin American countries is for the national research centres to act sim-

ultaneously i) in the modern sector, by giving priority in their studies –as some analysts have already proposed– to products with comparative advantages in the export market which must be made still more competitive through the biotechnological revolution, and ii) in the traditional sector, particularly in respect of foodstuffs for domestic consumption.

V

The regional situation

The economic crisis currently being faced by the majority of countries in Latin America, which is made worse by hyperinflation, the rapid advance of urbanization, the increase in the number of people living below the critical poverty line, and an external debt which stands in the way of economic development (plus the lag in scientific and technological progress), calls for the reformulation of the development model.

According to ECLAC estimates, in 1990 the gross domestic product of the region as a whole went down by 0.5% compared with the year before, when it had in any case only grown by 1.5%. As a result, the per capita product went down for the third year running, sinking back to the levels registered in 1977 and 1983. The growing inflation was on the point of assuming the chronic nature which can lead to hyperinflation: at the end of 1990, the cumulative twelve-month rate of price increases was 8 500% in Nicaragua, 8 300% in Peru, 2 400% in Brazil, 1 800% in Argentina and 130% in Uruguay. In other countries with recent high inflation which are applying stabilization programmes –including Mexico, Ecuador, the Dominican Republic and Colombia– the price rises were between 30% and 75% per year. These figures, which give grounds for concern, erode the purchasing power of wage earners.

In most of the countries of the region, there was no reduction in 1990 in the external sector's effective import capacity, either because exports expanded, because the servicing of the debt was postponed, or because a capital inflow was received.

The region's external debt amounted to US\$423 billion, after having gone down slightly the year before because the inability to fulfil debt service commitments led to arrears of US\$11 billion, while the devaluation of the dollar also helped. At the end of 1990, the most heavily indebted countries were Brazil, with US\$ 121 billion; Mexico, with US\$95.9 billion; Argentina, with US\$67.5 billion, Venezuela, with US\$31 billion; Peru, with US\$17.71 billion, and Colombia, with US\$17.2 billion (ECLAC, 1990).

Rapid urbanization has been the general rule in the region over the last three decades. At the beginning of the 1960s, 51.2% of Latin Americans lived in rural areas, but by 1990 the proportion had gone down to 30%. The remaining 70% live in urban centres, which continue to grow and give rise to dramatic processes of urban chaos. These changes have caused great modifications in the food system, in the preferences and habits of consumers, in the development of agro-industry, and in the increase in informal economic activities which compete with those carried on in the formal sector, but without paying taxes or giving any form of labour stability (the typical "black" economy). Urban unemployment increased in all the countries of the region except Chile (where it went down from 20.0% in 1982 to 6.6% in 1990) and Mexico (where it eased from 4.2% to 2.8% over the same period). In Colombia, such unemployment rose from 9.1% to 10.2%.

Quite apart from population growth itself, urban dwellers are increasingly concentrated in very large conglomerates. In 1950, there were ten

cities with 5 million inhabitants or more, whereas in 1990 there were 33 metropolitan areas with 5 million inhabitants or more, 15 with 10 million or more, and six with 15 million or more. Generally speaking, they display problems of "urban crisis", since their size makes any kind of rational ordering difficult. The most serious feature of the problem is that "cities in the world's poorer countries are fast filling up the ranks of the world's largest cities", and this represents a break in the historical connection between the size of cities and their degree of economic and social development, since this size no longer reflects an industrialization process which attracts new city dwellers, but phenomena of another nature based on the "tertiarization" of the economy. Some 58 of the world's 100 largest metropolitan areas are in developing countries, and the slums and shantytowns of the developing world are growing twice as fast as cities as a whole. "Estimates in 1987 put the proportion of city populations living in slums or squatter settlements above 30% for many developing country cities. In some cases the bulk of the city's population lives in slums: 70% for Casablanca, 67% for Calcutta, 60% for Bogota and Kinshasa, and 42% for Mexico City" (Population Crisis Committee, 1990). This increases the deficits of dwellings, public services and community equipment, as well as noise and

environmental pollution: in short, it makes poverty still worse.

In the case of the Latin American region, including of course Colombia, it is necessary to distinguish between two great economic options which involve in turn two great options in science and technology policy: either we accept the neo-liberal model which advocates passive adaptation to the new international division of labour, or we establish as a prerequisite the formulation of a nationalist policy for development and modernization of the economic base. This latter option calls for promotion of the agricultural and industrial sectors through expansion of the domestic market and the development of technological innovation in order to make good the areas where we are lagging behind, creating or consolidating in secondary and higher education a scientific base which favours national research and development capacity in strategic areas and spearhead sectors of technology. For this purpose, it is necessary to reformulate the role to be played by science and technology in the development of the country and to indicate clearly what their links should be with the educational system, particularly at the higher and postgraduate levels, where the supply of graduates must be guided not so much by the spontaneous demand of the market as by the strategic needs of the country.

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The polluter must pay

*Rafael Valenzuela**

The principle stated in the title of this article was adopted for the first time at the international level in 1972, by the Organization for Economic Cooperation and Development (OECD). Basically, it postulates that those responsible for pollution must pay the cost of the measures needed to prevent or reduce such pollution in order to comply with regulations and measures on environmental quality.

The basis of this principle is that the utilization of common goods as goods that are totally free, both in the sense of the way they can be used and the absence of any charges for their use or exploitation, has led to growing deterioration in the quality of the environment.

The aim is not to unmask the guilty or to become involved in the area of obligations to pay compensation. What is sought is simply to ensure that the internal costs of production activities or processes incorporate the costs which are currently external to them but which give rise to social diseconomies: in other words, the aim is to incorporate the negative environmental externalities.

This article establishes various criteria for imputing environmental costs and reviews some instruments for the application of the principle. It also analyses special situations where the immediate application of highly restrictive regulations could cause serious economic upsets, recommending in these cases a more gradual approach and the provision of assistance. It ends with an examination of the shortcomings of the principle, especially with regard to activities having extreme environmental consequences.

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I

The origin and basis of the principle that the polluter must pay

1. *The abuse of common goods*

The emergence of the principle that the polluter must pay has much to do with what the biologist Garret Hardin called the tragedy of common goods (Edmunds and Letey, 1975, p.112). For these purposes, common goods are taken to mean those elements in the environment which do not belong to anybody and can hence be used by everyone without anyone being able to claim exclusive rights over them. Examples of this are the atmosphere and the high seas and the corresponding sea bed, with all their hydrobiological and mineral resources. Most legislation recognizes the existence of this type of goods. Thus, for example, the Chilean Civil Code, adopted in 1885, speaks of "the things which nature has made common to all men, such as the high seas", adding that such things "cannot be the subject of private domain" and that "no nation, corporation or individual has the right to appropriate them" (article 585).

In view of their common status, these goods are free from the point of view of their unrestricted use and the absence of any costs for such use, which means that anyone can use them or take advantage of them without having to pay any other person or seek permission for this. This was always the practice, until, as from the end of the last century, after the Industrial Revolution, the unrestricted and ever-increasing exploitation of these goods, on the one hand, and their increasing use as a dump for an ever-increasing volume of all kinds of wastes and refuse, on the other, began to highlight their finite nature and their vulnerability to human action and sounded a warning note on the risk that the continuation of this type of behaviour could lead to irreversible damage to them, or at least damage that would take a very long time and enormous resources to correct, with the whole human race having to suffer the consequences.

It was obvious that the ruin of these goods would cause severe prejudice to all. In accordance with the logic of private gain, however, the results of the benefit/prejudice equation continued to be

favourable to those using or exploiting these goods beyond the threshold of their tolerance to human intervention, since the damage caused would be divided among everyone, whereas the benefits obtained from their exploitation would be for the exclusive enjoyment of their users or exploiters. In other words, in the final analysis the gains outweighed the losses. At the same time, it was argued, there was always the risk that the benefits foregone because of the reduction of pressure on these goods could mean that other, less scrupulous, agents would make still bigger gains at the expense of this lower pressure, since these goods would be available to them in larger quantities or in a qualitatively better state. Consequently, if the activities foregone by some were carried out by others on even more profitable terms, then what point was there in foregoing the maximum gain that could be obtained from common goods, if everyone had an equal right to use them and derive free benefit from them?

It will be gathered from this summary of the arguments put forward that the cause of the spoliation and degradation of common goods has lain more in their gratuitous nature than in their common status, since even if they continued to be of a common nature, if they had been given a price that had to be reflected as a cost in the profit and loss accounts or balance sheets of corporations, then even in a context of the most selfish utilitarianism the benefit/prejudice equation would have discouraged the overuse and overexploitation that they have been subjected to. It would be an oversimplification, however, to reduce the problem of common goods to a mere question of greater or lesser economic costs or benefits, even if this were done with the aim of helping to find solutions. Any integral statement of the issue must necessarily take account of its social repercussions and, in particular, the serious distortions which it creates in the area of distributive justice, since the truth is that an overwhelmingly large proportion of the people who suffer the consequences of the deterioration or degradation of common goods have not played any part whatever in causing those effects, nor do they receive any form of compensation or indemnity for the damage or hardships suffered.

It may be added that the fate of common goods has also been shared by certain publicly used national goods which can be freely used by all the

inhabitants of the country in question, for the same reasons and with similar consequences. This, too, has played a part in the origin and development of the principle that the polluter must pay.

2. *Negative environmental externalities*

Economic theory speaks of externalities or spillover effects when referring to certain interactions which may take place between the gains of one enterprise and the costs of another (Edmunds and Letey, 1975, p. 393). In general terms, it may be said that we are in the presence of an externality every time that the acts of one social agent give another a gain or benefit without obtaining any reward for this, or cause him damage or expense without giving any kind of compensation for this. In the first of these hypotheses, what is involved are positive externalities, while in the second they are negative externalities (Haveman (undated), p. 45).

Negative externalities are closely related with so-called "external costs" and generally arise as a result of the use of scarce resources over which no one can claim exclusive rights of ownership or use (Reynolds, 1976, p. 275). The use of elements of the environment which do not have any price assigned to them naturally represents a saving for those who make use of them. Since these components of the environment are not considered as economic goods and are hence outside the system of prices, any economic operator can use them or take advantage of them without thereby incurring any internal cost whatever.

From the moment when the use of these goods goes beyond the threshold of their deterioration or degradation, however, the saving enjoyed by those who use them becomes a diseconomy or external cost for those who are affected by their destruction or deterioration. The costs of restoring human health and well-being, rehabilitating components of the environment which have undergone quantitative or qualitative degradation, or restoring the functional equilibrium of the ecological systems to which they belong are examples of this type of costs.

When responsibility for this damage is not shouldered or paid for by those who caused it or contributed to it, this gives rise to a negative environmental externality. As society as a whole cannot

merely turn a blind eye to this damage and must consequently assume responsibility for its repair, the resulting external costs become "social costs". In other words, because of the fact that the internal costs of the users or exploiters of environmental elements have not been real, there has been a transfer of the greater costs to society as a whole, in a general and indiscriminate way, in the form of hidden costs, which means that the gains of a few have been obtained at the cost of an indirect social subsidy.

In order to reverse or put a halt to this situation, which is at variance with the principles of distributive justice, various solutions have been proposed, all aimed at obtaining what has been called the "internalization of externalities", that is to say, ensuring that the external costs involved in the prevention and combating of the deterioration of environmental elements of a common nature are assumed and accounted for as internal costs by those who bring about or contribute to such degradation. In so far as this direct and personalized imputation of the external costs makes it more profitable not to damage the environment, it also seeks to relieve the pressure on these environmental elements by reorienting it towards other goods or towards the development and application of less damaging technologies which will lead to a more reasonable and equitable allocation and use of these elements.

In the sphere of production, it will always be more than likely that those whose internal production costs are increased by the external costs that they have to incorporate in them will seek ways of passing on the higher costs to the purchasers of their products or the users of the services they provide, thereby causing the latter to bear their burden in the final analysis. Aside from the fact that this does not seem to be at variance with considerations of justice, especially when goods with elastic demand are involved, it is also possible that the progressive and compulsory addition of external costs will lead to such increases in internal production costs that it will not be possible to continue to transfer them to prices for reasons of competitiveness. Thus, the producer enterprise will have to begin to pay such costs out of its own profits, in order not to run the risk of not being able to continue selling its products or services on the market.

3. Competitive disadvantages

It may happen that an enterprise reaches the point where it cannot continue adding the greater domestic costs with which it is faced to the price of the products or services it offers or paying them out of its operating profits, in which case it will find itself pushed out of the market. Extreme situations of this kind may be considered socially beneficial when viewed in relation to the objectives of the process of internalization of negative environmental externalities. There is a danger, however, that the excessively rigid application of the measures adopted may bring with it competitive disadvantages which are neither justifiable nor desirable in the light of the general interest. This could happen, for example, if the use of particular technologies which do not damage the environment is made obligatory without providing for differentiated deadlines for their adoption, depending on whether the plants involved are existing factories which are already operating, or new plants that it is planned to install. It is obvious that new plants can incorporate these technologies into their production processes without having to make the structural and operational changes involved for existing plants, which would require correspondingly greater amounts of time and money.

Likewise, competitive disadvantages may arise in international trade when the export sectors of a given country have to comply with environmental quality requirements which are significantly greater than those affecting the export sectors of other countries and, in contrast with the latter, their production costs fully or largely reflect their real costs and do not enjoy similar amounts of indirect social subsidies generated by the existence of non-internalized social costs.

The foregoing has given rise to the view that, as a general rule, any kind of aid or social subsidy which makes it less onerous for the productive sectors to absorb the social diseconomies they cause represents a distortion of the conditions of production and consumption and a corresponding distortion of competition, which may have a negative effect on trade transactions and the location of investments. This is why such aid, except in a few special cases, tends to be considered as undesirable and principles such as the idea that the polluter must pay have been developed and applied.

II

Concepts and instruments for the application of the principle

1. The concepts

The principle that the polluter must pay was adopted for the first time at the international level on 26 May 1972, when the Council of the Organization for Economic Cooperation and Development adopted a recommendation on guidelines on international economic aspects of environmental policies (OECD, 1983a, pp. 173-174, and Kiss, 1983, p. 74). Two years later, on 14 November 1974, the OECD Council adopted a further recommendation, on the implementation of the principle that the polluter must pay, in which it clarified some aspects concerning the limitation of the exceptions that could be applied to this principle (OECD, 1983b, p. 174). It was within the European Communities, however, that the principle was defined most clearly and its concrete implications were spelled out.

For the Council of the European Communities, the principle that the polluter must pay means that all physical or legal persons under public or private law who are responsible for pollution must pay the cost of the measures needed to prevent such pollution or to reduce it to comply with the corresponding regulations and measures designed to attain the relevant quality objectives, or, where such objectives do not exist, to comply with the relevant regulations and measures laid down by the public authorities. The Council goes on to say that environmental protection should therefore, in principle, not be secured through policies based on the granting of assistance which, in fact, make society as a whole responsible for the cost of the fight against pollution.¹

Consequently, the principle does not refer to the responsibility which polluters may have for the damage caused by their pollution. It does not propose that those who cause damage by pollution must assume responsibility for this, thereby making it something like an environmental version of the

the idea of "an eye for an eye and a tooth for a tooth". The obligation to make compensation for damage caused by pollution exists, of course, but it is not based on this principle but on the general rules of the law of torts. There is therefore nothing standing in the way of the simultaneous application of the principle that the polluter must pay and of the rules on civil liability for damage caused to third persons, although it could happen that, even if this principle were adopted, there might be no legal grounds (because of non-fulfilment of the necessary legal requirements) for obtaining monetary compensation for the damage caused by pollution, or on the contrary, if it were legally possible to demand compensation for this damage, there might be no legal means of effectively applying the consequences of the principle, because it was not embodied in the legislation itself.

It is worth clarifying this point in some detail, since there must be many who will assume that the principle that the polluter must pay is fully settled by making the polluter responsible for the damaging consequences of his acts. Those who interpret the principle in this way usually view the responsibility of the polluter for the payment of compensation as being essentially an objective or constructive liability which does not depend on the legal culpability of the agent causing the damage but on the mere fact that he has carried out an act giving rise to the probability of damage, that is to say, he has taken a risk. Maintaining that the polluter must pay, then, would in conceptual terms be the same as saying that every person who causes damage to another as a result of having given rise to a polluting effect is obliged to pay compensation for the damage done, irrespective of whether he acted with malicious intent or committed a fault or whether he exercised all due care and caution.

Those who attribute this scope to the principle are often the same ones who see in it a kind of license to pollute. Such a license could indeed be considered implicit in the postulation itself, since if the principle does not outlaw pollution but merely makes the polluter responsible for paying compensation for the damage caused by his acts, this would mean that anyone who was willing to pay

¹See the Council recommendation of 3 March 1974 on the imputation of costs and the intervention of the public authorities in environmental matters, in EEC (1988), vol. I, p. 7.

could pollute. In our opinion, a contributory factor in this mistaken interpretation is the fact of speaking of the "principle of the originator" or the "principle of the responsibility of the causal agent" when referring to the principle that the polluter must pay. In the view of a distinguished legal expert, this confusion of ideas is due to the fact that more publicity has been given to the name of the principle than to its content (Brañes, 1987, p. 157).

In its correct interpretation, the principle does not seek to determine the guilty parties nor to enter into the field of their obligation to pay compensation. What it does seek to ensure is that the costs involved in the prevention and combating of pollution should be assumed and paid by those causing the pollution, and not by the community as a whole. When the principle states that the polluter must pay, it is referring to these costs and no others. It is referring, in other words, to the social diseconomies or external costs already mentioned and is stating that these costs must be incorporated in the internal costs of the activities or production processes which cause the pollution, so that these internal costs will reflect the real costs and not falsified or fictitious ones. The principle that the polluter must pay consists then, in the final analysis, of the duty to internalize the negative environmental externalities. This gives the principle a fundamentally economic rather than legal character, although if it is to be operational it must be explicitly or implicitly included in the domestic legislation of the countries or in international treaties (Kiss, 1983, p. 77).

Behind the principle lies the conviction that, if polluters are obliged to assume the costs of the externalities they cause, they will be indirectly pressured to reduce the polluting effects of their activities by, for example, using raw materials or technologies which cause less environmental pollution. Another underlying consideration is the determination to put an end to the distributive distortions implicit in a state of affairs where the gain of a few is obtained at the cost of the sacrifice and suffering of many.

2. Criteria for the imputation of costs

The way in which the principle is defined by the Council of the European Communities in its recommendation of 3 March 1974 leaves no doubt that those responsible for paying for pollution are

those who are responsible for causing it. The recommendation defines those responsible as those who directly or indirectly pollute the environment or create conditions conducive to such deterioration, noting in a footnote that the notion of "those responsible for pollution" does not affect the provisions regarding civil liability.²

At first sight it might appear that the definition of the expression "responsible for pollution", far from clearly defining its scope, on the contrary gives it an even broader extension than might be gathered from the literal meaning of the words, for the inclusion in it of a reference not only to those who "indirectly" pollute the environment (which is already going quite a long way) but also "those who create conditions conducive to such deterioration" means taking its scope to extremes where it might reasonably be asked who could possibly be outside the scope of its application. As we shall see later, however, it is fundamentally an operational definition which is directly related with the extremely broad criteria of the Council of the European Communities with regard to the imputation of costs. At the same time, the footnote mentioned above has the virtue of leaving no doubt that the principle in question has nothing to do with the problem of compensation for the damage caused by pollution to third parties.

The question of the imputation of costs is a complex one, but it is particularly important because it goes to the root of the principle: that is to say, the internalization of externalities. The first problem that arises is the identification of those responsible for the pollution, without which the imputation of the costs becomes an impossibility or else there is a risk of reaching arbitrary decisions. The biggest difficulties in this respect arise in relation with the forms of pollution termed "accumulative" and "chain pollution". Pollution is called accumulative when it is the result of various simultaneous causes, as occurs, for example, when the atmosphere over a city is simultaneously polluted by emissions from industrial boilers and furnaces, vehicle engines, and house chimneys. It is called "chain pollution" when it is the result of a chain of acts –not necessarily polluting when considered separately– which ultimately lead to a polluting ef-

² See the recommendation of the Council already referred to, in EEC (1988), p. 7, annex, section 3 and footnote on page 2.

fect: this occurs, for example, with the pollution caused by the exhaust gases of motor vehicles, where those involved as agents are not only the users of the vehicles but also their manufacturers and the producers of the fuel they run on.

The recommendation by the Council of the European Communities lays down that in these cases the costs must be imputed at the point in the chain or the accumulation process which offers the best solution from both the administrative and economic points of view. Thus, for example, in the case of chain pollution the costs must be imputed at the point where there is the smallest number of economic operators and the control of their activities is easiest, or at the point where the imputation of the costs can contribute most effectively to the improvement of environmental conditions, while at the same time avoiding distortions of competition.³ A noted Latin American expert on environmental law has put forward the opinion that when these directives are applied to the case of the pollution caused by the exhaust gases of motor vehicles, the correct point for the imputation of the costs would be first of all at the level of the vehicle manufacturers, and next at the level of the fuel producers (Cano, 1983, p. 16). Neither of these economic operators can be accused of being directly responsible for causing the pollution, and indeed in the Latin American case it is very likely that the vehicles or fuels were produced outside the region. When the above-mentioned definition of those responsible for pollution is applied, however, those operators can be considered as being responsible because they indirectly caused deterioration of the environment or, at the very least, created conditions conducive to such deterioration.

Quite apart from the difficulties which may arise in determining to which operators the costs should be imputed, the essence of the principle is that the imputation should be carried out in such a way and on such terms that it represents a real and effective increase in their internal costs for those responsible for the pollution, while for the community as a whole it represents a corresponding real and effective reduction in their external costs connected with pollution. If this is accompanied by open or concealed allowances, exemptions, privi-

leges or special aid of any type provided by the public authorities for the benefit of those responsible for pollution in order to reduce the severity of the higher costs involved by imputation of the costs, however, the internalization of the externalities will be distorted, as will the application of the principle itself. We shall return to this point in connection with the question of exceptions or pseudo-exceptions to the terms of application of the principle.

3. Instruments for the application of the principle

a) Regulations

The main instruments available to the public authorities for implementing the principle that the polluter must pay are regulations and special charges.

Within regulations –also known as standards– a distinction may be drawn between environmental quality standards, product standards and process standards.

For this purpose, environmental quality standards are taken to mean those which lay down the maximum levels of pollution or environmental disturbance which are allowable within a given environment or part of an environment. Product standards, for their part, may have various aims, such as fixing the maximum permissible levels of contamination in the composition of a product; laying down the necessary properties or characteristics of its manufacture; determining its methods of use, and laying down specifications on testing methods, packaging, and the marking and labelling of products, the term “product” being understood for all these purposes in its broadest sense.

Process standards refer in particular to fixed installations and comprise the subdivisions termed emission standards, which lay down the maximum permissible levels of emissions or polluting discharges; construction standards, which lay down the specifications that must be complied with in the design and construction of plants in order to protect the environment; and operational standards, which lay down for the same purpose the conditions which the production or manufacturing processes must comply with. These operating standards, like the product standards concerning

³See the recommendation by the Council already referred to, in EEC (1988), p. 7, annex, section 3, and footnote on page 2. See also Cano (1978), pp. 136-137.

the forms of use of a particular thing, element or substance, may also be covered by what are known as codes of practice.⁴

The fact of having to comply with a standard involves special costs. For example, in the case of a product standard which lays down maximum limits for the pollutants which can be present in a particular substance, those who produce it will be obliged to take measures to ensure that the amount of pollutants does not exceed the stipulated limit, and if they do not do so they will run the risk of being punished; these measures consequently involve a cost which they would not have had to incur if the standard had not been adopted. Once an emission standard has been imposed, it will probably be necessary to make changes in the production technologies or the processes of purification or neutralization of effluents in order to ensure that the pollutants emitted do not exceed the maximum permissible levels, with everything that this involves in terms of non-budgeted investments. Before the adoption of these standards or any of the other measures in question (with the sole exception of the standards on environmental quality), the costs of forestalling and combatting the adverse effects stemming from the use or consumption of impure materials or the unrestricted emission of polluting effluents, to continue with the examples proposed earlier, were borne by the community as a whole in the form of external costs.

Once standards have been adopted, this situation is reversed, leading to the imputation of these external costs to the internal production costs of those who had been making a profit at the expense of a social diseconomy. This imputation does not pretend to be numerically exact. Indeed, there is no great interest in knowing the total amount of the costs which society was assuming. The term "imputation" is used in a figurative sense, signifying only that what previously gave rise to a given external cost will now be assumed and accounted for as a given internal cost, so that there will be internalization of a negative environmental externality and the principle that the polluter must pay will consequently have been put into effect.

What is really worth noting in respect of this mechanism is that the mere adoption of the stand-

ard means that the principle has already been put into effect. Society does not receive any payment. If third parties harmed by pollution do obtain some kind of compensation, this will be through the regular civil liability of the party responsible for the pollution, which is governed by criteria and subject to procedures totally divorced from the principle under consideration here. Nevertheless, the party responsible for the pollution has had to pay, since he has had to assume a cost which he had previously been able to avoid, while society has been freed from a cost which it had had to pay before the standard existed.

These redistributive effects are not achieved simply by adopting an environmental quality standard, since the mere adoption of the standard does not force anyone in particular to avoid exceeding the maximum permissible levels of environmental pollution or disturbance of the environment. It is another matter, however, if the public authorities take additional measures to reduce and keep down the concentrations of pollutants to levels defined as socially acceptable whenever the standards are infringed or in danger of being infringed. Such measures could consist of the imposition of supplementary or subsidiary standards of other kinds, the establishment of special charges, or other measures. Indeed, when the problem of environmental pollution is tackled in a serious and integral manner, the measures taken to reduce it are not usually limited to the isolated imposition of a certain type of regulation or standard, but involve the establishment of a whole interconnected system of different kinds of regulations which mutually strengthen and reinforce each other.

It must be borne in mind, however, that although the imposition of standards in itself implies the putting into effect of the principle that the polluter must pay, this principle will only really come into force if the internalization of the negative environmental externalities involved is carried out without any social counterparts in the form of subsidies, tax or accounting advantages, or other forms of aid given by the authorities to those responsible for pollution (Kiss, 1983).

b) *Special charges*

Special charges are the other most effective instrument that the authorities have at their disposal for applying the principle in question. They are fre-

⁴ See the recommendation of the Council of the European Communities of 3 March 1974 in EEC (1988), p. 7, annex, section 4, paragraph a.

quently also referred to as charges, taxes, rates or tariffs, although these words may not always be used as strict synonyms.

These charges provide for compulsory periodic payments, generally at a progressive rate, and they have two well-defined functions: to act as incentives for positive action and to act as a means of redistribution. Such charges fulfill their role of incentives for positive action to the extent that they induce those responsible for pollution to adopt of their own accord the measures needed to reduce or eliminate the pollution they cause, which will take place when the payment of these charges represents a greater economic sacrifice than that involved in the adoption of such measures. When this higher burden is imposed on them, it may be expected that those responsible for the pollution will consider it more profitable, and hence more attractive, to reduce the volume or toxicity of their polluting effluents in order to avoid having to pay the special charges or at least to be eligible for paying them at lower rates, rather than continuing the state of affairs which made them subject to their payment.

If, on the other hand, the amount of the special charge is less burdensome than the cost of taking such measures, then the polluters will prefer to pay the charge, which means that it will have failed in its purpose of acting as an incentive for positive action. Special charges also have a redistributive function, however, as they oblige those responsible for pollution to repay to society the expenses which it had to incur in order to tackle the damage caused to the environment by such pollution. For this purpose, it is necessary that the special charges should be fixed at such a level that, with regard to a particular region or a particular environmental quality objective, their total amount will correspond with the total collective expenditure that must be made in order to attain the proposed environmental objectives.⁵ Even when a special charge fails to fulfill its purpose of acting as an incentive, this is far from meaning that its adoption was totally worthless from the environmental point of view, since it still fulfills its redistributive function, which is its main aim.

In contrast with the position regarding standards, for the establishment of which it is not necessary to calculate the external costs being incurred by society, when fixing special charges it is necessary to make a prior economic estimate of the amounts involved, including the administrative costs directly connected with the execution of anti-pollution measures.

Once special charges have been established, their two functions act together to contribute to the objective of making those responsible for pollution –and not the community as a whole– assume and defray the costs of preventing and combating its adverse effects. Regardless of whether their aim is to give incentives or bring about redistribution, there is an internalization of external costs and, ultimately, application of the principle that the polluter must pay, but only on condition –it must be repeated– that there are no parallel social allowances which reduce or relieve, and therefore distort, the burden represented by the payment of such charges.

The funds collected through the special charges must be applied to the financing of the environmental protection and rehabilitation measures carried out by the public authorities, especially in the area of environmental pollution. Under the terms of the recommendation of the Council of the European Communities, these funds can also be used to contribute to the financing of special installations effected by private polluters, but only when the latter, at the express request of the competent authorities, bring down their pollution to levels below those considered acceptable by those authorities, thereby rendering a special service to the community.⁶ Such contributions tend to offset the greater expenses incurred by those responsible for the pollution and thereby maintain their level of competitiveness in cases where otherwise their greater sacrifice for the benefit of the community would give competitive advantages to other firms who limit themselves to a minimum degree of compliance with the general rules imposed.

⁵See the recommendation adopted on 3 March 1974 by the Council of the European Communities, in EEC (1988), p. 8, annex, section 4, paragraph b). See also Cano (1983), pp. 16-17.

⁶See the recommendation by the Council of the European Communities in EEC (1988), p. 8, annex, section 4, paragraph b).

III

Exemptions from the principle

1. *Express exemptions*

Implementation of the principle has revealed that the immediate application of very restrictive standards or very burdensome charges may cause serious economic upsets which have the opposite effect to what was intended, so that instead of reducing the external social costs deriving from environmental pollution, they lead instead to new and perhaps even greater social costs under other headings. This situation forms the background to the recommendation made by the Council of the OECD on 14 November 1974 on the implementation of the principle that the polluter must pay. This recommendation begins by reasserting the principle that the public authorities must not provide assistance which helps polluters to get round the costs of pollution control through subsidies, tax advantages or other measures. It immediately goes on, however, to admit that exceptionally such aid may be justified, provided it is strictly limited and complies with the requirements of being selective, temporary, and not giving rise to distortions in international trade.⁷ In legal terminology, such exceptions to the general rule are known as defeasances.

The requirement that such assistance must be "selective" means, according to the recommendation by the OECD Council, that it must be restricted to those parts of the economy (such as industries, zones or plants) where serious difficulties could arise in the absence of aid from the public authorities. With regard to industrial activities, however, doubt has arisen as to whether the assistance must be limited to existing plants or can also apply to new plants.

According to the recommendation by the Council of the European Communities of 3 March 1974, such assistance can only benefit production plants which are already in operation and existing products, and it must be understood for these purposes that any extensions made to operating plants, if they result in an increase in their production ca-

capacity, must be considered as equivalent to new plants, so that they are not eligible to be subsidized.⁸

The recommendation by the OECD Council on the implementation of the principle, however, permits the aid to be extended to new plants provided that the difficulties they face are of an exceptional nature and that the terms governing the granting of the aid are even stricter than those applicable to existing plants.⁹ The reason for this distinction between plants already in operation and new plants is, of course, that the costs incurred by the latter in bringing their production processes in line with the new environmental regulations will normally be less than those of the former (Kiss, 1983).

Another requirement is that the aid should be "temporary". The recommendation by the OECD Council of 26 May 1972 on guidelines regarding the international economic aspects of environmental policies admits the possibility that the application of the principle that the polluter must pay may be subject to exceptions or special arrangements, particularly in periods of transition (OECD, 1983a, pp. 173-174). The same Council's recommendation of 14 November 1974, in contrast, is much stricter and states that the aid must be limited to well-defined transitional periods established in advance and in keeping with the specific economic and social problems associated with the implementation of the environmental programme of a country (OECD, 1983b).

The strictness of these conditions is in contrast with the recommendation by the Council of the European Communities of 3 March 1974, which merely recognizes the occasional need to give certain polluters a time limit for adapting their products or production methods to the new standards and/or to give them aid which is limited in time and may be of a decreasing nature.¹⁰ Although not

⁷ See the relevant recommendation of the OECD Council, section 2, in OECD (1983b).

⁸ See the recommendation of the Council of the European Communities in EEC (1988), p. 9, section 6, paragraph a).

⁹ See the recommendation by the OECD Council on the implementation of the principle that the polluter must pay, section 3, in OECD (1983b).

¹⁰ See the recommendation by the Council, in EEC (1988), p. 9, annex, section 6, paragraph a).

expressly stipulated, it may be gathered from the context of these recommendations that extraordinary temporary time limits for adapting to new environmental requirements may be granted only in the case of industrial plants which are already in operation.

Lastly, the recommendations of the OECD Council indicate that assistance granted by the public authorities must not give rise to significant distortions in international trade or investments. What should be understood by "significant" distortions is a question on which there are no specific Community directions regarding their size and evaluation.

It is worth mentioning that behind these prohibitions and restrictions on the aid which the public authorities can give to those responsible for pollution are the provisions of Article 92 of the Rome Treaty of 25 March 1957 which gave birth to the European Economic Community (EEC). According to this Treaty, all forms of aid granted by States or by means of State resources which distort or threaten to distort competition by favouring particular enterprises or products are incompatible with the Common Market, in so far as they affect trade among member States. The same provision, however, states that aid designed to promote the economic development of regions where the standard of living is abnormally low may be considered as compatible with the Common Market, as also are measures which seek to correct a serious disturbance in the economy of a member State. This has been interpreted as support for exceptions to the general rule which the OECD Council and the Council of the European Communities have gone to some

lengths to specify (Biblioteca Política Taurus, 1960, pp. 173-174).

2. *Quasi-exemptions*

We give the title of quasi-exemptions to the types of aid which the recommendation of 3 March 1974 of the Council of the European Communities does not consider to be contrary to the principle that the polluter must pay, in order to distinguish them from the types of aid which that same recommendation terms "exceptions" to the application of the principle and which we have dealt with under the title "express exemptions".

Firstly, aid which is not considered contrary to the principle includes possible financial aid granted to local communities in order to build and manage public environmental protection installations whose costs cannot be covered immediately and in full with the proceeds of the special charges paid by the polluters who use such installations. If these are plants for the treatment of effluents other than household wastes, however, it is laid down that the services provided must be charged for in a manner which reflects the real costs of the treatment processes.

Other forms of aid not considered contrary to the principle are types of financial assistance designed to offset the particularly heavy charges imposed on certain parties responsible for a certain type of pollution, in order to achieve an exceptionally high level of environmental purity.

Other forms of aid which belong to this category include contributions made in order to promote the execution of research on the development of less polluting production technologies or the manufacture of less polluting products.¹¹

IV

Shortcomings of the principle

It cannot be pretended that the application of the principle that the polluter must pay offers an integral solution for the problem of environmental pollution, since this involves much more than a mere redistribution of costs. That the cost of the measures against pollution should be borne by

those who cause it and not those who suffer from it, without having helped to produce it, is a requirement of distributive justice which is beyond discus-

¹¹See the recommendation of the Council of the European Communities of 3 March 1974, in EEC (1988), p. 9, annex, section 7.

sion. There are types of pollution, however, which simply should not be allowed to take place, either because they create living conditions which are highly dangerous for human life or health or for the functional stability of the ecological cycles, processes and balances which are the basis of life, or because they give rise to irreversible damage.

In a situation of loss of human life, the extinction of species or other similar extreme consequences, there is no longer any sense in even talking about the internalization of externalities, since what might in other circumstances be termed an externality or external cost constitutes, in plain words, a totally irrational practice and act of external destruction which cannot be assessed in monetary terms and must be dealt with once and for all. The principle therefore only extends to the limit of what can be internalized. Beyond that limit what is involved is not a question of distorted costs but rather a problem of distortion of the whole idea of the right to life, since he who gradually takes away the life of another person by a succession of acts with lethal effect, as occurs in the case of certain types of pollution, is just as guilty of homicide as

he who takes away the life of another person through an act of violence.

In such cases, the function of incentivization which the principle seeks to carry out must give way to a function of radical dissuasion, and its function of redistributing economic burdens must give way to a function of assigning responsibilities. This involves, on the one hand, the characterization of "crimes against the environment" subject to severe penalties, and on the other, the establishment of a system of civil liability for damage to the environment which gives the victims of pollution the certainty of being able to obtain full and timely redress for all damage done to them.

This does not mean belittling the validity of the principle that the polluter must pay nor falling into the frequent confusion between its scope and that of the conventional system of civil liability. It merely seeks to emphasize that the adoption of the principle alone is not sufficient to serve as a social response to the problem of environmental pollution and must therefore be supplemented with other measures of both a criminal and civil nature.

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Macroeconomic policy coordination and integration

*Arnim Schwidrowski**

Macroeconomic policy coordination is a new topic in the Latin American integration debate. In the light of pronounced macroeconomic instabilities in many Latin American economies, the recent efforts to revitalize regional integration schemes have led to an awareness that differences in national macroeconomic performance, as well as the instability *per se*, could frustrate advances in regional integration.

Both Argentina and Brazil still suffer from very high macroeconomic instability, and they have also embarked on an ambitious regional integration initiative known as "MERCOSUR". Their past and present integration efforts are therefore of special interest for analyzing the impact of macroeconomic policies on Latin American integration processes, as well as the scope and limits of regional macroeconomic policy coordination.

Whereas the Group of Seven (G 7) and the European Community (EC) used international coordination for internal macroeconomic stabilization, Argentina and Brazil would have to "put their houses in order" before trying true macroeconomic policy coordination. Moreover, the experience of the former suggests that a high degree of economic integration gives rise to a "virtuous circle" between integration and macroeconomic policy coordination. In contrast, a low degree of integration, as found within the Latin American Integration Association (ALADI), may impede such coordination.

Although the observable impact of Argentina's and Brazil's macroeconomic policies on trade is rather weak, this does not invalidate the need for future macroeconomic policy coordination. Sectoral and trade policies, as well as the internal instability in both countries, have so far obscured the macroeconomic effects on trade. However, the impact of the latter will increase if these policies are harmonized and a certain degree of stability is reached.

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Introduction

Until recently, the Latin American integration debate has paid very little attention to questions of macroeconomic policy coordination.¹ During the last few months, however, the need for and the problems of unifying the national macroeconomic policies have attracted increasing attention. This is due to two parallel developments. On the one hand, the recent past has seen the rise of a strong political will to revitalize regional integration schemes, aiming ambitiously at the establishment of free trade zones and common markets within a few years. On the other hand, whereas some Latin American countries have already made considerable progress towards stabilizing their economies, many still suffer from pronounced macroeconomic instability. This has led to concern over the extent to which differences in national macroeconomic performance, as well as the instability *per se*, will turn out to be a factor capable of frustrating the desired advance of regional integration. Notwithstanding the expressed willingness to address this problem by "harmonizing" or "coordinating" national exchange rate, monetary and fiscal policies, a systematic evaluation of the forms compatible with Latin American conditions and with the requirements involved is not yet available.

The problems posed are particularly relevant for the two largest South American countries, Argentina and Brazil. Both economies still suffer from almost unprecedented degrees of macroeconomic instability. Since the two countries have also launched one of the most ambitious regional integration initiatives –the so-called "MERCOSUR" (subsequently joined by Uruguay and Paraguay)–, their past and present integration efforts are of special interest for analyzing the impact of macroeconomic policies on the Latin American integration process, as well as for a discussion of the scope and limits of regional macroeconomic policy coordination.

Sections I and II of this paper are devoted to a discussion of the theory and practice of the relationship between economic integration and macro-

¹For some of the few recent contributions, see Bekermann (1990), Halperin (1990), Lerda and Mussi (1987) and Tavares de Araujo (1990).

economic policy coordination. They outline the different theoretical patterns of interaction between these two concepts and present a brief account of the experience of the Group of Seven (G7)² and the European Community (EC) in this field. Whereas the experience of these two groups confirms the thesis that a high degree of economic integration and interdependence gives rise to a "virtuous circle" between integration and macroeconomic policy coordination, a low degree of interdependence, such as that found between the ALADI member countries, may produce a "vicious circle" in which the low degree of integration hampers such coordination, and vice versa.

The next two sections apply these general insights to the Argentine-Brazilian case. Section III gives an outline of their macroeconomic policy-making since 1985 –the year of the first serious efforts towards bilateral integration– and this permits an assessment of the extent to which the G7's and the EC's experience with macroeconomic policy coordination is applicable to the situation of

these two countries. Although the concrete patterns adopted by the industrialized countries can hardly be imitated by the two Latin American States, their example permits a systematic evaluation of the forms and requirements involved in any effective international cooperation in this field. This evaluation is then used to delineate the scope and limits of collaboration between Argentina and Brazil. In section IV, the incidence of both countries' macroeconomic policies on their bilateral trade is examined from two perspectives. Although the observable impact on bilateral trade since 1985 is rather weak, this does not invalidate the need for macroeconomic policy coordination in a future free trade zone. The strong influence exerted on trade by sectoral and trade policies, as well as the high internal instability in both countries, have so far obscured the macroeconomic effects. However, their impact will increase if these policies are harmonized as planned and a certain degree of stability is reached. Finally, section V summarizes the main conclusions of this article.

I

Integration, interdependence and macroeconomic policy coordination

1. *Virtuous versus vicious circles*

Both political and economic scientists have discussed the meaning and the determinants of international economic interdependence.³ The first-named are mainly interested in the overall influence of international economic relations on individual States, because the politicians' concern with interdependence is expected to rise with its potential impact on the national economic environment. Consequently, political science employs above all *average* indicators to measure the degree of economic interdependence, the most frequently used being the "degree of openness", given by the ratio of the value of international trade to GDP. Economists, for their part, focus on the impact of

marginal changes in external economic parameters on internal aggregates and vice versa. Usually, these are analyzed with the help of income and trade elasticities of trade. According to a study by Keohane and Nye (1977), this difference may be characterized by the terms "vulnerability interdependence", meaning the overall exposure of a national economy to external developments, and "sensitivity interdependence", referring to the effects of marginal disturbances.

Obviously, the judgements of both groups about the degree of interdependence need not coincide. A low degree of openness makes the political scientist conclude that the overall vulnerability to external influences is of little concern to politicians and makes them feel little need for policy action. In contrast, adverse variations of external and internal parameters make economists stress the negative consequences for trade and its future development, however small their actual importance for the economy as a whole may be. Never-

² The Group of Seven (G 7) is made up of the major industrialized countries: United States, Canada, Japan, Germany, France, Italy and United Kingdom.

³ For a discussion of this, see Cooper (1985).

theless, both viewpoints are profoundly interconnected since the degree of openness is the result of the accumulated sequence of marginal variations of internal and external determinants. Moreover, economic and political concerns converge with a rising degree of openness.

This interplay of average and marginal determinants of a country's exposure to its international environment is of particular importance for the relation between economic integration and macroeconomic policy coordination.⁴ It provides the basis for assuming, on the one hand, a positive relationship between the degrees of economic integration and interdependence and, on the other hand, an inverse relationship between the degree of interdependence and the effectiveness of national macroeconomic policy-making. The first is presumed to be positive because of the effects of economic integration on the variables which define economic interdependence. By demolishing barriers to trade, economic integration is expected to increase trade between the countries involved, thus raising their degree of openness. Additionally, international flows of goods and factors of production increase their responsiveness to changes in relative prices and demand if their markets become unified, which is equivalent to saying that their price and income elasticities of trade increase.

When the degrees of economic integration and interdependence rise, national macroeconomic policies will find their effectiveness more and more limited, because higher international mobility of goods and factors tends to erode the domestic effects of these policy actions and causes unexpected and unwelcome spill-over effects in other, interconnected economies. This gives rise to a desire to reduce and control the disturbing effects of these movements by an appropriate international combination of national macroeconomic policy actions. It is important to note that in such circumstances, possible conflicts between the pursuit of national and international macroeconomic objectives cease to matter as national sovereignty over macroeconomic instruments is gradually eroded. In situations of high economic interdependence, international coordination of macroeconomic policies can even help to recover control over the domestic economy. Since the coordination of macroeconomic policies

reduces the disturbances caused to trade by unrelated national measures, the development of commercial relations is expected to be favoured in turn.

However, if a group of countries is characterized by a rather low level of mutual economic interdependence, it is improbable that their efforts towards more integration will enjoy the benefit of such a self-sustaining "virtuous circle" between integration and macroeconomic policy coordination. In contrast, the danger of a "vicious circle" arises because a lack of such coordination can effectively block any advance in economic integration if it causes substantial and permanent distortions of the conditions for trade. Moreover, the will to promote macroeconomic coordination may be rather limited, since the net national costs of such international coordination are imminent and high, whereas the benefits can only be reaped in an uncertain future. In comparison with the former case, these costs are higher because, on the one hand, limitations imposed by any international commitments on the scope of domestic action can easily conflict with the need to pursue purely national objectives. On the other hand, the benefits of cooperation are low because the vulnerability of the domestic economic situation to adverse external events is limited. In these circumstances, the lack of coordination of macroeconomic policies can prevent the degrees of economic integration and interdependence from reaching a stage which would lead to the initiation of the "virtuous circle" described earlier.

2. *Economic interdependence: some empirical evidence*

According to the key elements set out in the previous section, a complete evaluation of the existence of a virtuous or vicious circle between the efforts at economic integration and macroeconomic policy coordination would have to give evidence of a correlation between, on the one hand, rising price and income elasticities of trade and degrees of openness between the countries considered, and, on the other hand, increased levels of macroeconomic policy coordination.

Table 1 shows the degree of openness for the member countries of the G7, EEC and ALADI, as well as for the groups as a whole. The first column gives the figures for total trade, the second for trade within the group. All these groups show two common tendencies: firstly, within each group, the

⁴For an early discussion of the interrelation of integration and interdependence, as well as their appropriate measures, see Tollison and Willett (1973).

degree of openness varies inversely with the size of the economies, and secondly, the smaller the economy, the more important becomes intra-group trade in relation to extra-group trade.

Table 1
G 7, EEC AND ALADI: TOTAL AND
INTRA-GROUP TRADE^a
(As a percentage of 1989 GDP)

	Total trade	Intra- group trade
GROUP OF SEVEN (G7)		
Canada	41.9	35.2
France	38.9	18.6
Fed. Rep. of Germany	50.9	21.5
Italy	32.3	16.7
Japan	17.1	7.6
United Kingdom	42.1	20.0
United States	16.6	8.5
Total^b	28.4	14.2
EUROPEAN ECONOMIC COMMUNITY (EEC)		
Belgium and Luxembourg	122.8	89.2
Denmark	52.3	27.5
France	38.9	25.1
Fed. Rep. of Germany	50.9	25.7
Greece	32.6	29.8
Ireland	117.0	80.7
Italy	32.3	18.5
Netherlands	94.8	70.8
Portugal	84.5	60.2
Spain	30.5	18.6
United Kingdom	42.1	20.3
Total^b	47.3	27.7
LATIN AMERICAN INTEGRATION ASSOCIATION (ALADI)		
Argentina	25.7	7.1
Bolivia	54.3	27.2
Brazil	21.2	2.6
Chile	55.0	10.2
Colombia	31.7	4.7
Ecuador	48.0	7.8
Mexico	37.1	1.1
Paraguay	50.7	20.1
Peru	36.5	7.5
Uruguay	51.8	22.0
Venezuela	72.9	5.3
Total^b	33.0	4.0

Source: ALADI, ECLAC, IMF.

^aImports and exports of goods and services.

^bWeighted average.

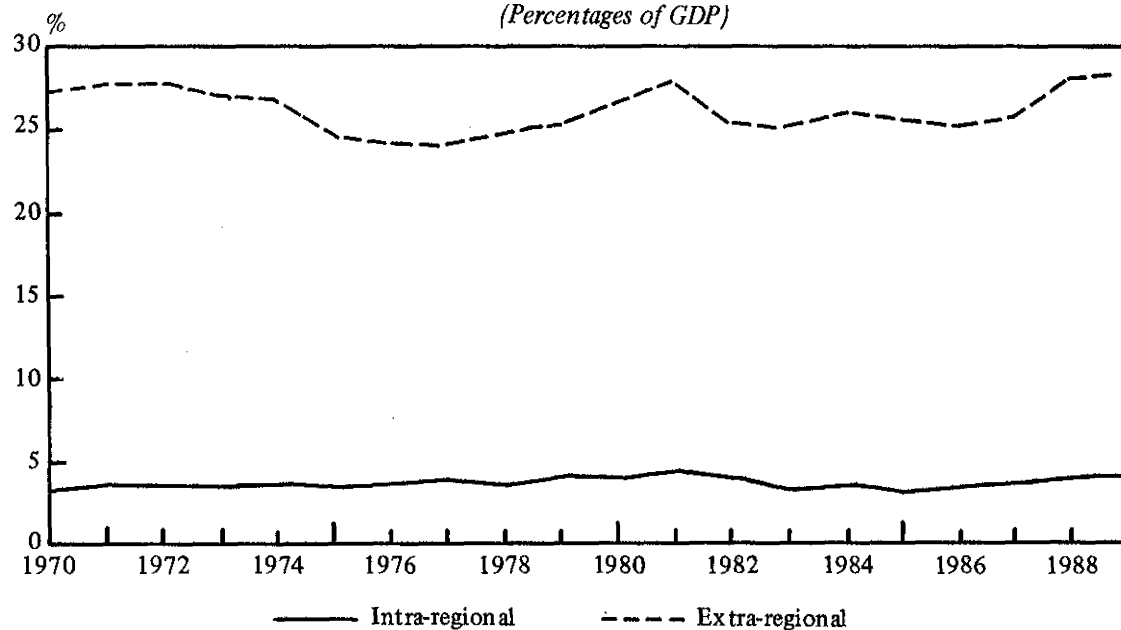
There are marked differences between the degree of openness towards the own group and the rest of the world among these country groups. For all the EC countries except the United Kingdom, trade with the other member countries is more important than trade with the rest of the world: a result which is also observed for the G7 as a whole. In contrast, the figures for the ALADI countries display, on the one hand, a low level of trade relations with the other ALADI countries, while on the other hand the degree of openness towards the rest of the world is, for the group as a whole and for all its member countries except Argentina and Brazil, higher than that of the two groups of industrialized countries.

Figures 1 and 2 show the historical evolution of the degree of openness of ALADI and the EEC towards their own group and the rest of the world. Again, the differences are remarkable. Whereas ALADI's indicators do not show any significant changes from 1970 to 1989, the proportion of intra-EEC trade to GDP shows almost uninterrupted rapid development, more than doubling from 12.7 % in 1960 to 28.8 % in 1990. In contrast, the EC's degree of openness to the world has recently fallen back to a level which is even lower than that in 1960, after rising to a higher level between 1974 and 1985.

These observations permit the following conclusions: In marked contrast to the situation among industrialized countries, the trade relations among Latin American countries represent such a low proportion of their GDP that variations in intra-regional trade cannot be expected to produce notable repercussions in the national economies. The figures suggest that the Latin American economies are much more exposed to the effects of macroeconomic policies adopted by the industrialized countries.

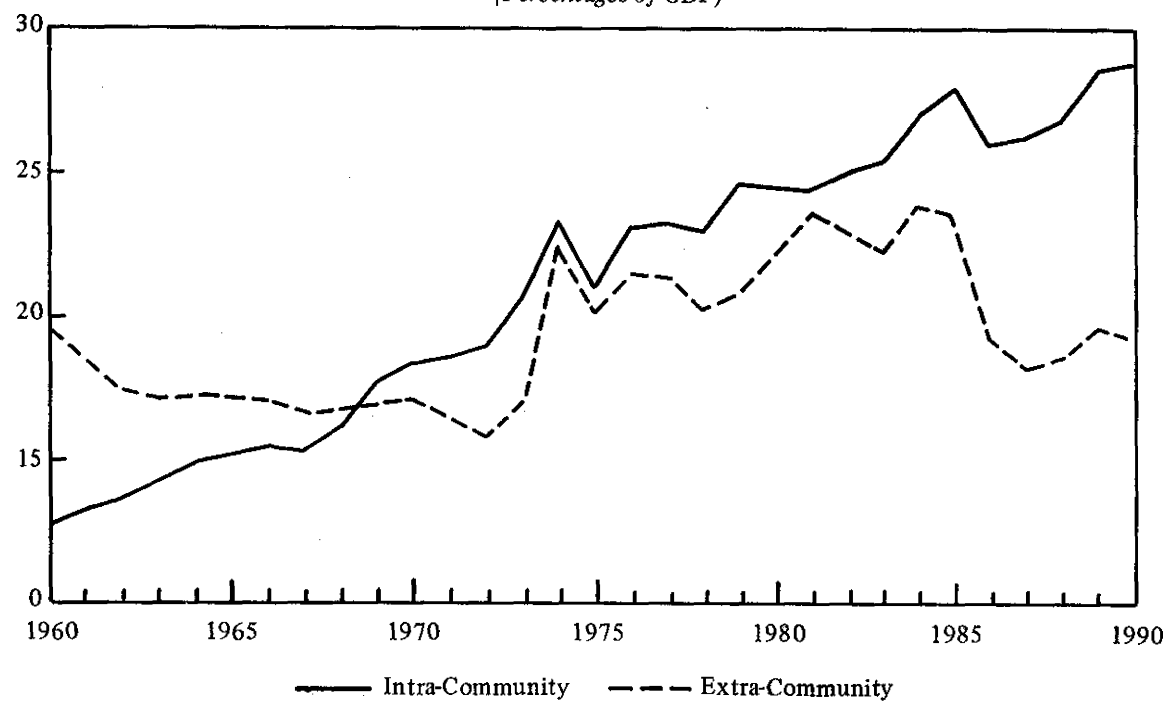
For the EEC, the evolution of the degrees of openness towards the own region confirms the hypothesis that a higher degree of economic integration leads to dynamic growth of trade. Moreover, a comparison of this indicator with the degree of openness towards the rest of the world provides a clear illustration of the classical assumption that economic integration promotes trade creation among the group of countries involved, as well as trade diversion away from the rest of the world.

Figure 1
ALADI: INTRA- AND EXTRA-REGIONAL TRADE, 1970-1989
(Percentages of GDP)



Source: ALADI and United Nations Statistical Office.

Figure 2
EEC: INTRA- AND EXTRA-COMMUNITY TRADE, 1960-1990
(Percentages of GDP)



Source: EEC and United Nations Statistical Office.

In comparison, the evolution of both intra-ALADI and extra-ALADI trade with respect to GDP was found to stagnate over the time period considered. This can be taken as a rough indicator that this country group has neither increased its internal degree of integration, nor its interdependence with the rest of the world.

As regards the international transmission of macroeconomic policy effects, the literature has almost exclusively concentrated on examining the policy spill-overs among industrialized countries, whereas much less attention has been given to the incidence of the industrialized countries' macroeconomic policies on developing countries, and analyses of these repercussions within the developing countries are extremely rare.⁵

A recent study (Bryant *et al.* (1988)) has compared the projections of twelve large-scale models for the industrialized countries. The results confirm

that the effects of national macroeconomic policies on other countries are considerable, and that their overall economic impact varies inversely with the degree of openness.

For example, the models predict that an increase in US fiscal expenditure equivalent to 1% of US GDP raises the GDP of the other OECD countries by approximately 0.4%. If, however, the latter countries expanded their fiscal expenditures by the same amount, the effect on US GDP would be only half as large, namely 0.2%.

Due to these substantial effects of macroeconomic policies on the performance of other, interconnected economies, it can be appreciated that national policy-makers have felt the need to align their macroeconomic policies. The next section gives a brief account of the G7's and the EEC's efforts in this field.

II

Macroeconomic policy coordination in the EEC and the G7

As regards international macroeconomic stability, the time after World War II is divided into two periods. During the first, extending until the beginning of the 1970s, the international arrangements known as the Bretton Woods System guaranteed a high degree of exchange rate and price level stability among the industrialized countries, contributing to fast growth of international trade and national output. Nevertheless, the system implied a considerable loss of national autonomy in the use of macroeconomic policies.

The system broke down because of three developments: firstly, increasing international capital market integration and the rapid growth of so-called "offshore" financial markets gave rise to substantial short-run capital movements which made it increasingly difficult to defend exchange rate stability. Secondly, growing internal economic pressures –among them, the economic consequences of the Vietnam war– made the US less inclined to play the role of the international guarantor of

stability. Thirdly, economic theory had begun to favour a system of flexible exchange rates because it seemed to be more appropriate for reducing the persistent current account disequilibria and the destabilizing impact of capital movements. Moreover, it would provide greater national autonomy over macroeconomic policies.

However, these expectations were quickly frustrated when exchange rates were allowed to move freely. The short-run volatility and the "overshooting" of exchange rates was seen to constrain the growth of international trade⁶. Besides this, the medium-run divergence of exchange rates from what was believed to be their long-run equilibrium values was seen to lead to a waste of economic resources as their allocation followed incorrect international price signals. Moreover, uncoordinated national policy responses to real shocks, above all the oil price increases, proved to be rather ineffective and to have unwanted repercussions in the other economies.

⁵As an example of the latter, see Gasiorowski (1985).

⁶For a theoretical and empirical examination of the effect of exchange rate volatility on trade, see De Grauwe (1988).

For these reasons, the need for new forms of international macroeconomic policy coordination was quickly felt. Since 1975, the so-called Group of Seven (G7), comprising the world's largest industrial nations, instituted regular meetings of their heads of government and ministers of finance to discuss international economic problems and agree on concerted actions.⁷ Until 1979, the countries, inspired by the Keynesian model, pursued international demand management through tightly coordinated policies. When leaders who followed monetarist policy advice took office in almost all the countries however, this coordination changed to rather loose cooperation, aiming at convergence of the national macroeconomic performances by attacking, above all, domestic inflation rates through the macroeconomic policy combinations appropriate to the individual cases.

A move towards tighter cooperation followed the success in stabilizing short-term exchange rates achieved through the concerted action known as the Plaza Agreement in 1985. However, increasing attention had been drawn to the macroeconomic causes for the changes in medium-term levels of exchange rates, in particular the dramatic real appreciation of the US dollar until 1985 and its subsequent decline to historically low levels in 1990 and 1991; for a long time there was broad disagreement between the US, on one side, and Germany and Japan on the other, regarding the cause and the cures for this phenomenon. The latter countries argued that the appreciation of the dollar had been a consequence of US deficit spending which, due to high interest rates, attracted foreign capital and, at the same time, allowed US absorption to rise relative to production; the US, however, maintained for a long time that the higher US interest rates and imports only reflected rising US productivity, as produced by microeconomic policy reforms. Even when this opinion became increasingly unsustainable, opinions varied substantially on the most appropriate way to address the US current account deficit through concerted international action. Thus, Japan and Germany insisted that a reversal of the situation would have to come by way of a reduction in the US budget deficit, whereas the US

—unsuccessfully— proposed the adoption of expansive fiscal policies by those countries in order to stimulate US exports.

Compared with the variety of objectives and patterns of macroeconomic policy coordination pursued by the G7, the EEC has shown, in contrast, firm dedication to building a zone of high nominal stability of exchange rates and monetary variables, while on the other hand it has made an ambitious attempt to use tight international cooperation as a mechanism for stabilizing the domestic macroeconomic environment of its member States⁸.

The reasons for the concern with stable exchange and interest rates were threefold: Firstly, the stability reached through the *de facto* coordination of macroeconomic policies under the Bretton Woods System was seen as a decisive factor for the progress of European integration during its first decade. Secondly, this situation of nominal stability resulted in an intra-EC trade regime which was characterized by the lack of any national mechanisms to protect against external macroeconomic disturbances, and consequently, trade was felt to be extremely vulnerable to such instability. Thirdly, the functioning of the Common Agricultural Policy's (CAP) price setting mechanisms depended heavily on nominal and real exchange rate stability.

The quest for internal stabilization through external commitments was primarily pursued by means of the European Monetary System (EMS), established in 1978, and took three principal forms.⁹ The member States agreed to internal realignments of exchange rates which did not fully reflect inflation rate differentials. This put pressure on countries with relatively high inflation rates to pursue internal anti-inflationary policies. Moreover, the weight of national currencies in the common monetary unit, the ECU, was fixed in percentages instead of nominal amounts, which gave the ECU a built-in bias towards stability. Finally, smaller and less stable member countries discovered that they could effectively gain internal policy credibility for domestic disinflation policies by joining the EMS.

⁷ For a historical account of the G7's experience, see Putnam and Bayne (1987).

⁸ Among the abundant literature on the theme, see for example Briz de Labra and Carbajo Vasco (1988) and Van der Ploeg (1989).

⁹ For a non-technical review of the arguments, see Bank of England (1991).

However, this advantage of "tying one's hands" by importing EMS stability, as well as the whole attempt to use the EMS as an instrument for the convergence of member countries' national inflation rates at a lower level¹⁰, depended crucially on the existence of a member country – the Federal Republic of Germany – which was, on the one hand, firmly dedicated to internal monetary stability and, on the other hand, was sufficiently large to absorb the potentially disturbing effects of the role of a stabilizing anchor. Moreover, given the crucial importance of EC trade and investment for German economic prosperity, the benefits to Germany arising from EC-wide macroeconomic stability were seen to outweigh the costs involved in such a role.

As well as identifying their specific circumstances, the examples of these two groups of countries make it possible to classify the various forms of macroeconomic cooperation, as well as to identify its essential prerequisites. According to the degree of intensity of cooperation, Steinherr (1984) distinguishes the following main forms:

- *exchange of information*, the least intensive form of cooperation;
- *international agreement on the objectives* to be pursued by appropriate though not necessarily

coordinated national macroeconomic policies, in order to lead to economic convergence;

- *harmonization* of macroeconomic policies, which means the adoption of common rules for these policies. By reducing the scope for discretionary action, this is expected to lead to greater uniformity of the economies in the medium and long run;

- *coordination* of discretionary, short-run actions. This is the most intensive form, requiring agreement on mutually consistent target values, as well as the concerted selection and use of national macroeconomic instruments.

To put any of these forms of co-operation into effect, two basic requirements have to be fulfilled:

- policy-makers must share a common view on the "global macroeconomic model", i.e., the way in which the main determinants of the macroeconomic environment interact; otherwise, divergent perceptions of the causes of international problems lead to differing recommendations on the appropriate cures and make lasting concerted action improbable.

- national policy-makers must have effective control over their set of macroeconomic instruments. Otherwise, compliance with any international commitment may be found not to be feasible.

III

The macroeconomic situation of Argentina and Brazil, 1985 to 1990

1. *Macroeconomic policies in Argentina and Brazil, 1985-1990*

A first step towards analyzing the need for and problems of macroeconomic coordination in the case of Argentina and Brazil is to give a brief account of the main features of macroeconomic policy-making in both countries. As a starting point, 1985 was chosen because the first concrete steps towards bilateral integration were undertaken in that year.

¹⁰For a theoretical discussion of this argument, see Giavazzi and Pagano (1988). For an application to the case of Ireland, see Kremers (1990).

Both countries show great similarities in the patterns of their macroeconomic policies. This is true of the principal objectives pursued and the instruments used, as well as of the problems encountered. Although both countries' macroeconomic instability originated primarily from external imbalances, it has subsequently been aggravated by two internal developments: the economic agents' increasing ability to hedge against domestic macroeconomic fluctuations, and the loss of credibility of macroeconomic policy-making¹¹, stemming from the incapacity to restore the internal monetary and fiscal balances.

¹¹A study on the rising level of credibility in macroeconomic policy-making is given by Persson (1988).

During a first period, which started with the Austral Plan in Argentina and the Cruzado Plan in Brazil, both governments thought they could reduce inflation without recessionary consequences by adopting so-called "heterodox policies". Inflation was mainly attributed to an inertial element arising from economy-wide indexation. Consequently, price and wage freezes, as well as monetary reforms, were at the heart of the stabilization plans implemented. Although this strategy was successful in the short run, it proved to be unsustainable in the long term. This can be attributed to three factors: Firstly, the inertial element was just one of the causes of high and rising inflation, and the governments did not effectively combat the second cause, which was constituted by the fiscal deficits. Secondly, the artificial freeze of relative prices over a prolonged period of time made economic agents turn to political pressure to improve their economic situation. Thirdly, the price freeze maintained pronounced disequilibria between aggregate demand and supply. In the case of Brazil, the excess demand led to other clandestine forms of price increases and an import surge. In Argentina, depressed aggregate demand led to a general recession.

Under the impact of the failure of this strategy, both governments tried to form "social pacts" between the conflicting economic groups in order to ensure the success of subsequent price freezes. However, the attempts at stabilization undertaken in 1989 failed again. This was partly due to the ability of some economic groups to improve their initial position at the expense of others. However, it was due above all to the governments' incapacity to take effective measures against the public deficits, which made the public increasingly skeptical about the sustainability of the stabilization efforts undertaken. Preventive action then taken against a perceived revival of high inflation rates contributed substantially to the breakdown of the stabilization plans.

At the beginning of 1990, both countries changed their macroeconomic strategy and adopted restrictive fiscal and monetary policies. Fiscal austerity addresses the problem of public debt and deficits, whereas tight monetary policies try to contain inflation rates. The strong recessionary consequences induced an abrupt fall of inflation rates, accompanied by a real revaluation

of both national currencies. However, any doubt about the governments' determination to reduce fiscal disequilibria induces the public to take preventive action to forestall the anticipated unsustainability of the current situation. This, in turn, has great potential for destabilizing the domestic environment, in the manner of a self-fulfilling prophecy.

Besides inflation rates, real interest rates have become ever more responsive to internal changes. Both demand and supply of foreign currencies—above all, the US dollar—have become increasingly unstable. Whilst short-term demand is mainly influenced by economic agents' desire to buy foreign exchange as a hedge against expected rebounds of inflation, supply is highly responsive to changes in real domestic exchange rates. Consequently, real exchange rates of both countries show a considerable short-run volatility which is much more a reflection of quickly changing expectations on internal developments than the counterpart of trade flows.

2. The scope and limits of the EEC's and G7's experience as a model for the Argentine-Brazilian case

In the previous section it was argued that a lack of credibility is at the heart of Argentina's and Brazil's macroeconomic instability. It is worthwhile asking now if the EEC's attempt to use external macroeconomic commitments to aid internal stabilization could also be used by Argentina and Brazil. Due to differences in size, it would be more probable that Argentina could benefit from Brazil in this way than vice versa. However, it must be remembered that the EEC's success depended crucially on the existence of a large, stable and interested country as the anchor of the system. The current instability of both countries makes it improbable that an attempt to imitate the European example in this sense could be successful.

Secondly, although the variability of the real exchange rates of both these countries is more accentuated than that observed among the industrialized nations, the stress placed by the latter on exchange rate stabilization was primarily motivated by the spill-over effects. These, in turn, originated in the high degree of capital mobility produced by capital market integration and the full

convertibility of the currencies in question. These conditions do not exist in the Argentine-Brazilian case. Here, exchange rate changes are mainly home-made and do not have any immediate repercussions on the other economy, although erratic movements may be of concern for bilateral trade.

Thirdly, the recourse taken in both countries to ever more drastic macroeconomic measures reflects the loss of credibility and the increased capacity of private agents to protect themselves against the impact of the policy measures taken. This has made macroeconomic instruments increasingly ineffective. Although both governments coincide in their perception of the causes and cures of their macroeconomic problems –and thus, in principle, fulfill one of the fundamental requirements for cooperation in this field–, the control over the respective national instruments has deteriorated to such an extent that any attempt at true macroeconomic policy coordination is difficult to implement.

Consequently, it follows that the only feasible forms of cooperation between the two countries are those which are less intensive and demanding in the short run. Given the congruence concerning macroeconomic objectives, it can be said that both countries are already pursuing –albeit indirectly– a convergence of their economies towards a similar level of stability. The particular problems of each country and, above all, the threat of quickly destabilizing internal developments, mean that policy-makers must be able to choose and change their policies, which makes prior international commitments on the rules or instruments used rather undesirable.

In sum, the current macroeconomic situation in both countries makes it indispensable that both “put their house in order” by adopting the policy measures which are appropriate to their individual cases. More ambitious forms of macroeconomic policy coordination will only become feasible after both economies have converged towards a considerably higher level of overall stability.

IV

The influence of macroeconomic policies on bilateral trade

1. 1985 - 1990

Macroeconomic policies are expected to influence trade through two channels: firstly, through their impact on national production costs, above all wages and interest rates, and on the international prices of national products, as determined by the exchange rate, and secondly, through the evolution of internal demand as reflected in the demand for imports and the supply of exports.

To assess the evolution of the first set of parameters, figure 3 illustrates the evolution of the bilateral real exchange rate and bilateral real wages in Argentina's and Brazil's manufacturing sectors. In comparison to the evolution of real bilateral wages, the evolution of the real exchange rate between Argentina and Brazil had been relatively stable until the beginning of 1989. During 1989 and 1990, however, it showed a high degree of instability and a trend towards a higher level for Argentina. Real wages, however, showed much more pronounced variability and multiplied the move-

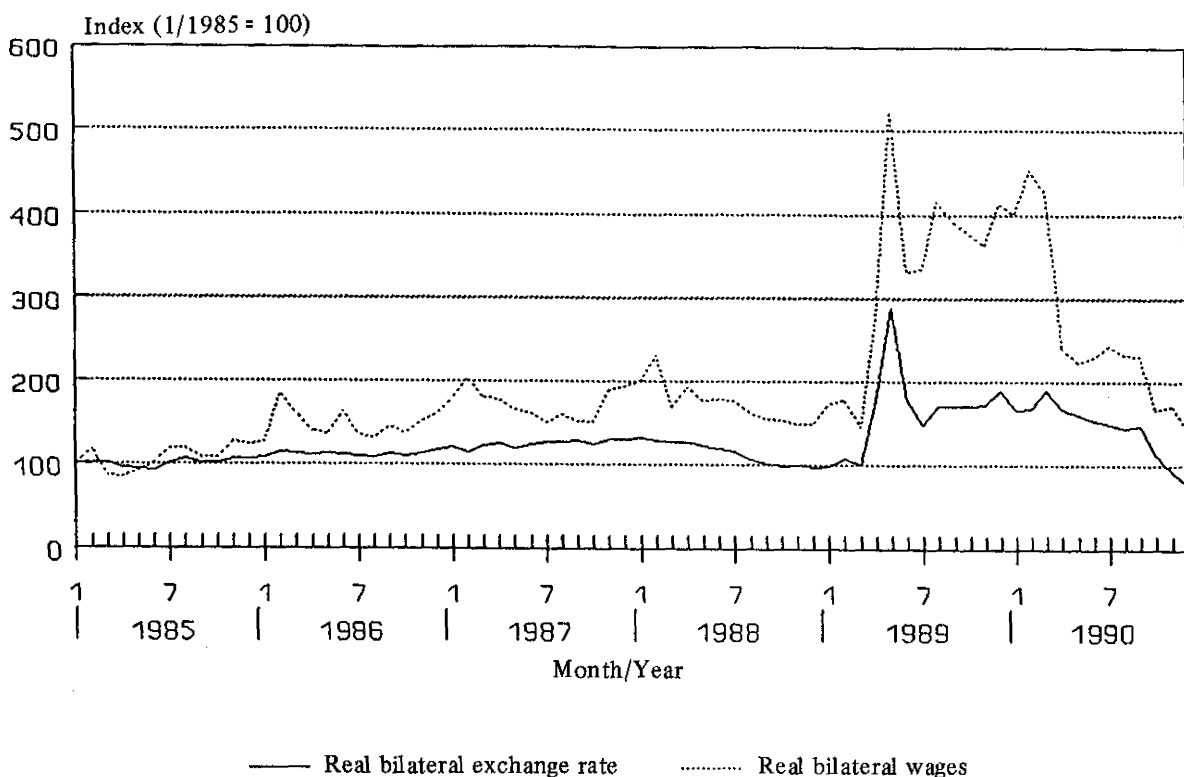
ments of the exchange rate. Both indicators gave grounds for predicting that Argentine exports should have increased their bilateral competitiveness *vis-à-vis* Brazilian production, especially during 1989 and 1990. This, in turn, should have led to reduced bilateral imports and increased exports.

Turning to the second factor, the evolution of internal demand, figure 4 shows the development of both countries' GDP, as well as the difference between their growth rates. Brazil's growth rate has in general exceeded that of Argentina during the period observed, although both countries suffered a gradual decline of their GDP after 1986. In general, this growth pattern may be assumed to have stimulated Brazilian imports from Argentina and, during periods of high internal demand, to have reduced bilateral exports.

The trade figures shown in table 2 provide some confirmation of these hypotheses¹². Espe-

¹² The data available were insufficiently detailed and the time horizon too short for a rigorous statistical examination of the hypotheses, however.

Figure 3
 ARGENTINA AND BRAZIL: REAL BILATERAL EXCHANGE
 RATES AND WAGES, 1985-1990^a



Source: Argentina: *El Economista*.

Brazil: Getulio Vargas Foundation, *Conjuntura Econômica*.

^aA rise in the indexes represents bilateral monetary devaluation or a drop in real wages for Argentina.

cially in 1986 and 1989, Brazil's strong internal demand can be seen to be reflected in the large increases in imports from Argentina, and in 1989 the sharp and prolonged change in the exchange rate obviously contributed to this development. For the case of Argentina, the pronounced recessions of 1985 and 1989 are reflected in reduced imports, whereas in the other years these increased despite the relatively adverse evolution of internal growth. This can partly be explained by the sectoral composition of imports. Two sectors, chemicals and steel products, have consolidated their share in bilateral imports, reaching 56% of the total in 1989. Both these sectors have considerably increased their export orientation during the period observed, partly because of the export promotion measures introduced in 1985¹³ and the problems posed by large-scale production processes facing slack inter-

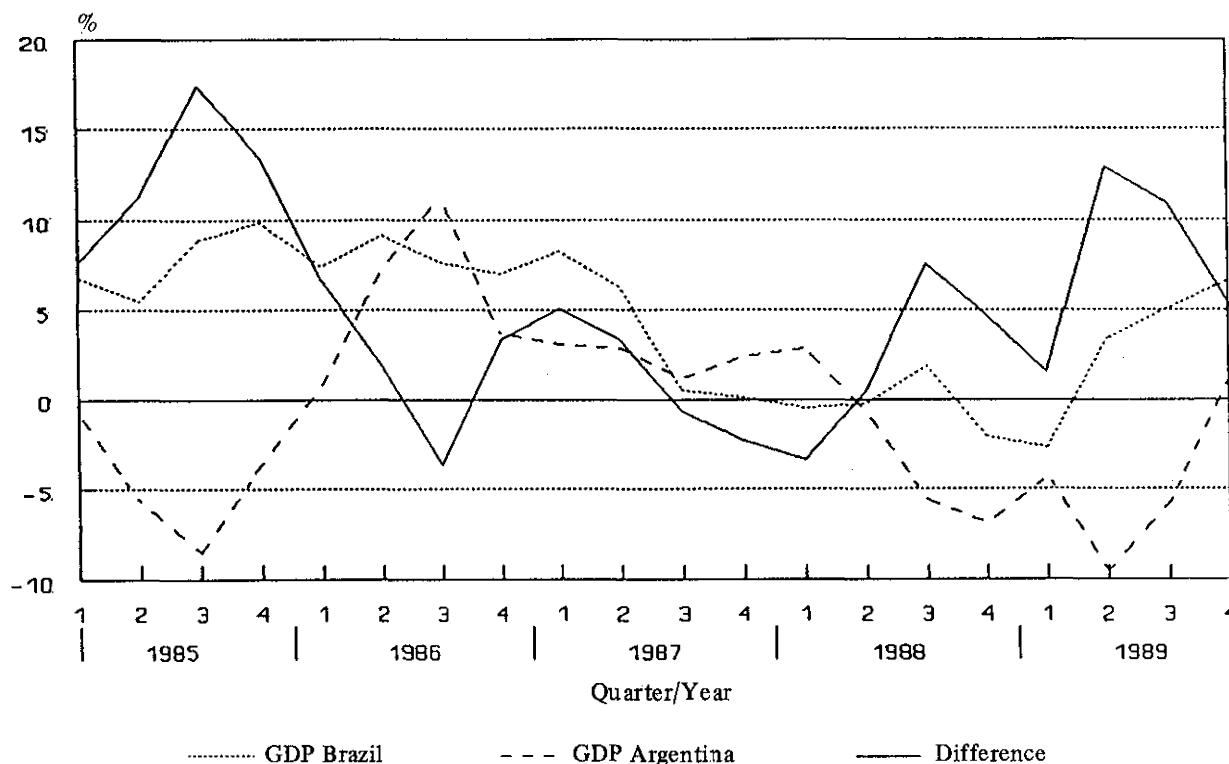
nal demand. In this sense, purchases from Brazil in these sectors had the role of imports for increasingly export-oriented industrial activities. In this context, the repercussions of the internal demand situation are naturally very limited. Moreover, the State's interest in the development of these sectors might have tended to mitigate the adverse effects of the macroeconomic environment.

Besides these observations, the reduced responsiveness of bilateral trade flows, especially to exchange rate changes, could be attributed to the protection against internal macroeconomic instability provided by the export promotion policies in both countries. For example, the Brazilian export financing system protects exporters effectively against real exchange rate changes and internal interest rate fluctuations¹⁴. In other words, a relatively adverse external environment might still have

¹³ For an analysis of the Argentine industrial export promotion policy, see ECLAC (1990).

¹⁴ For a recent evaluation of the financial incentives provided, see Ribeiro Ratto (1989).

Figure 4
ARGENTINA AND BRAZIL: ECONOMIC GROWTH, 1985-1989



Source: Argentina: Latin American Economic Research Foundation (FIEL).
Brazil: Getulio Vargas Foundation.

been preferable to the conditions prevailing in the internal markets.

2. The MERCOSUR context

In the context of the future MERCOSUR, the planned harmonization of sectoral and commercial policies, as well as including a general tendency towards reducing the State's role in industrial and commercial activities, will reduce the impact of the aforementioned measures to combat internal and external macroeconomic instability. Moreover, effective reduction of tariff and non-tariff barriers is expected to raise the participation of private economic agents in bilateral trade and give rise to bilateral investment. The impact of macroeconomic policies and instability on bilateral trade could then be expected to increase considerably.

Above all, the questions related to exchange rate changes will then gain importance. Besides the necessity of reducing exchange rate volatility, since

this constitutes a cost to trade activities, the question of how to determine and defend a suitable real bilateral exchange rate will undoubtedly be of particular concern¹⁵. Whereas the solution of the first problem will depend on the efforts to reduce internal macroeconomic instability, any solution to the second will have to be related to a situation in which both countries have gained sustainable macroeconomic equilibria. For these two reasons, the attainment of a situation of macroeconomic convergence towards a stable level in both countries will become a crucial factor in the process of constructing the future free trade zone between both nations. If, however, macroeconomic stabilization cannot be achieved, the increasing negative impact of macroeconomic distortions on bilateral trade and investment will most probably become a major obstacle to the completion of MERCOSUR.

¹⁵ For a methodological discussion of the various alternative ways of defining a suitable medium-run exchange rate, see Williamson (1983).

Table 2

ARGENTINA: STRUCTURE OF TRADE WITH BRAZIL, 1984-1989*(In thousands of current dollars)*

	1984	1985	1986	1987	1988	1989
1. Exports to Brazil						
Food and live animals	201 656	197 137	378 066	247 074	236 530	526 897
Wheat	107 323	105 811	76 863	96 176	88 081	158 366
Vegetables	17 638	21 691	54 142	37 092	39 493	58 085
Apples	26 095	24 771	35 099	32 059	23 492	28 199
Beverages and tobacco	72	191	633	307	559	3 364
Crude materials, inedible	40 571	11 979	16 952	22 533	29 860	28 336
Mineral fuels	20 440	63 474	23 380	84	4 109	19 344
Oils, fats, waxes	69 728	70 345	41 972	25 396	37 425	43 990
Chemical products	37 449	38 345	47 253	64 153	112 533	129 452
Organic chemicals	12 991	13 859	9 363	23 331	67 760	53 152
Inorganic chemicals	14 462	14 307	23 503	23 338	28 048	35 662
Manufactured goods	68 061	54 179	106 184	79 414	51 864	175 481
Leather	59 314	47 598	89 039	40 014	11 192	9 813
Machinery and transport eqpt.	31 612	50 079	65 695	84 629	111 239	159 203
Industrial machinery	5 128	5 100	9 718	16 577	17 350	33 313
Office machines	415	480	3 508	4 881	11 410	9 888
Electrical machinery	2 390	4 835	6 813	3 724	3 149	9 900
Vehicle motors	84	4 999	7 212	8 278	10 803	14 364
Vehicle parts	22 664	33 808	33 332	33 118	32 044	49 644
Miscellaneous manuf.	8 563	10 524	17 718	15 646	23 698	38 096
Commodities n.e. classified	58	38	216	95	144	267
Total	478 210	496 291	698 069	539 331	607 961	1 124 430
2. Imports from Brazil						
Food and live animals	106 008	76 083	109 346	89 287	66 943	45 884
Coffee	34 348	24 127	50 998	28 994	17 132	13 062
Beverages and tobacco	44	84	1 085	1 527	1 934	2 769
Crude materials, inedible	116 825	99 819	122 667	125 868	132 079	166 098
Iron ore	66 260	70 290	86 675	87 094	92 954	132 806
Mineral fuels	11 186	18 119	867	31 135	51 051	2 218
Oils, fats, waxes	1 291	1 952	1 137	1 019	1 169	1 015
Chemical products	195 432	137 583	168 822	181 030	220 971	191 816
Organic chemicals	67 863	49 726	80 790	95 538	112 369	117 399
Inorganic chemicals	11 844	7 750	12 275	11 339	13 882	12 623
Manufactured goods	216 928	113 396	109 665	145 516	270 125	140 147
Iron and steel	137 844	60 770	34 475	63 650	186 445	80 903
Machinery, transport eqpt.	162 807	147 010	158 244	221 797	207 314	159 658
Industrial machinery	25 967	23 338	26 385	35 438	43 553	34 521
Office machinery	19 399	17 684	10 718	11 363	12 288	10 199
Electrical machinery	38 865	29 074	36 302	32 629	34 200	26 743
Vehicle motors	8 898	8 858	14 642	16 650	20 152	14 327
Vehicle parts	41 822	36 902	44 235	63 291	56 481	41 949
Miscellaneous manuf.	20 566	17 397	19 074	21 247	19 248	10 999
Commodities n.e. classified	51	86	374	795	543	670
Total	831 138	611 529	691 281	819 221	971 377	721 274
Trade balance	(352 928)	(115 238)	6 788	(279 890)	(363 416)	403 156

Source: United Nations Statistical Office (UNSO), International Commodity Trade Data Base (COMTRADE).

V

Conclusions

The main results of this article can be summarized in the following six statements:

1. A high degree of economic integration and interdependence, as observed in the case of the G7 and EEC member countries, produces almost automatically the need for macroeconomic policy coordination, which, if carried out successfully, in turn favours economic integration. In contrast to this "virtuous circle", a low degree of economic interdependence, as found among the ALADI member countries, makes macroeconomic policy coordination less urgent from the national viewpoint and more costly in terms of national sovereignty. If this lack of coordination has a significant negative impact on economic relations, it constitutes an important barrier against raising the degree of economic integration and interdependence, which consequently leads to a "vicious circle". In this situation, macroeconomic policy coordination is a prerequisite for, rather than a consequence of, progress in economic integration.

2. Due to the specific patterns and circumstances of macroeconomic policy cooperation among the G7 and EEC countries, most of their lessons can hardly be applied to the Latin American case. For the G7, this stems above all from the decisive role played by the high degree of financial market integration: a factor which does not yet exist in Latin America. For the EEC, the lack of comparability is attributable firstly to the *de facto* macroeconomic policy coordination produced by the Bretton Woods System during the first fifteen years of the EEC's existence (until the beginning of the 1970s) and secondly, to the fact that the subsequent endeavours to implement mechanisms which coordinate *nominal* monetary variables and exchange rates in order to achieve the reduction and convergence of national inflation rates (and, in some cases, to gain domestic credibility for disinflation policies) can only be effective if a relatively low level of initial macroeconomic instability exists, and if the larger economies involved display a high degree of macroeconomic stability.

3. Nevertheless, the experience of the G7 and the EEC allows some general guidelines to be drawn for international macroeconomic policy co-

ordination. The concrete objectives and intensity of macroeconomic policy cooperation can vary widely over time, ranging from the pursuit of an overall convergence of national macroeconomic performance, by means of rather uncoordinated internal policies, to a genuine coordination of discretionary actions in order to reach jointly agreed macroeconomic targets. However, two basic requirements must be met for any form of successful international cooperation: Firstly, the policy-makers of the different nations involved must share a common view on the broad functioning of the macroeconomic environment, since this makes them agree on the causes and cures for international macroeconomic problems. Secondly, national authorities must have control over their domestic macroeconomic instruments in order to produce the internationally desired effects.

4. Although Argentina's and Brazil's macroeconomic instability originated primarily from external imbalances, it has been subsequently aggravated by two internal developments: the economic agents' increasing ability to hedge against macroeconomic fluctuations, and the erosion of the credibility of macroeconomic policy-making, stemming from the incapacity to restore the internal monetary and fiscal balances. Both factors have rendered the use of macroeconomic tools increasingly ineffective. Consequently, one of the aforementioned fundamental requisites for the coordination of macroeconomic policies is currently not fulfilled, even though at present the national policymakers' viewpoints about the causes of instability broadly coincide, as may be seen from the priority given in both countries to the restoration of fiscal balances. Accordingly, any attempt to secure true and close coordination of macroeconomic policies requires the recovery of internal stability, which, in turn, depends on regaining internal credibility for macroeconomic policy-making.

5. During the (relatively short) time span considered, trade flows between the two countries have been found to react to macroeconomic influences only if these were of substantial magnitude and duration. The impact of changes in

economic activity has been evident, but the incidence of the considerable fluctuations of relative bilateral prices (exchange rates, labour and financial costs) has been less notable. This is seen to be attributable to two factors: Firstly, a considerable proportion of bilateral trade still consists of products of special national importance, which are covered by special sectoral policies and/or inter-governmental trade agreements, which presumably reduces their sensitivity to macroeconomic variations. Secondly, the elaborate structure of national trade policy schemes may have reduced the level of risk of foreign trade activities *relative* to the considerable uncertainties faced in the internal markets, thus making international commercial activities still more attractive.

6. Both these elements are expected to lose importance in a future free trade zone. To the extent that sectoral policies are harmonized, a certain degree of internal stability is reached, and the sig-

nificance of private trade and investment activities is increased, the effects of macroeconomic changes—in particular exchange rate variability and misalignments—on the development of bilateral economic relations will become increasingly significant. Since the importance of bilateral trade for the global economic performance of both countries is still relatively limited, however, it is difficult to see how attempts at tight coordination of macroeconomic policies could survive situations of conflict between the pursuit of national objectives and the goals of cooperation. This, together with the high degree of macroeconomic instability which still exists in both economies, suggests that the pursuit of convergence of the macroeconomic performance of both countries towards sustainable equilibria by means of (not necessarily coordinated) internal policies is more desirable and more feasible than attempts to attain some form of genuine macroeconomic policy coordination.

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Reconciling subregional and hemispheric integration

*Juan Alberto Fuentes K. **

This article analyses the type of subregional integration efforts which could at the same time help to further the aims of increasing competitiveness, taking advantage of the opportunities created by the Enterprise for the Americas, and progressing towards an open world economy where multilateral rules rather than the use of naked power prevail. In particular, it is argued that subregional integration can, on the one hand, serve as a precedent for possible subsequent non-discriminatory agreements, while on the other hand it can create favourable conditions for growth based on greater efficiency and competitiveness, as well as promoting domestic and foreign investment.

This dual potential of subregional integration is first of all explored with regard to trade liberalization, trade rules, and factor mobility. As well as considering the potential effects of easing the application of tariff and non-tariff barriers, an appraisal is made of the possibility of joint action on matters which have been the subject of multilateral trade negotiations and negotiations between the United States and Canada and Mexico, such as countervailing duties, safeguard clauses, rules on origin, services, and intellectual property. Finally, some institutional requirements of subregional integration processes are identified in the light of the above objectives, and the implications of the process of transition caused by the liberalization due to subregional and hemispheric integration are explored.

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Introduction

After a crisis period in which the absence of general guidelines was compounded by excessive flexibility, the Latin American and Caribbean integration process seems to be entering a new phase combining pragmatism with a clearer sense of direction, stemming primarily from a quest for international competitiveness. In addition, there is an awareness of the need to achieve two seemingly contradictory objectives: building up a world economy where multilateral rules rather than the use of naked power prevail, and taking advantage of the opportunities created by the Enterprise for the Americas. Subregional integration could play an important role in reconciling these dimensions of trade policy by establishing bases for increasing competitiveness, taking advantage of hemispheric integration, and making effective progress towards an open international economy: in other words, it would be a clearly "outward-oriented" form of economic integration.

The aim of this paper is to identify the types of subregional integration actions which are consonant with this approach. The countries subject to this integration are considered to be those already forming part of groups such as MERCOSUR, the Andean Group, the Central American Common Market and CARICOM, but the possibility of alternative groups or the expansion of existing groups is not ruled out. It should be noted that there are big differences between the various groups, reflecting the growing diversity of the countries which make up Latin America and the Caribbean.

To begin with, the outstanding issues that need to be taken into account when seeking to further subregional integration in the light of the above objectives are identified. Hence, a brief analysis of the relations between integration (both subregional and hemispheric) and competitiveness is made, followed by consideration of the links between integration and multilateralism. This brings us to the central part of the paper, which, as already mentioned, consists of the identification of types of subregional action consonant with the quest for competitiveness, the exploitation of the opportunities offered by hemispheric integration, and progress towards an open and non-discriminatory world economy. In view of the broader geographic

scope of hemispheric integration, these are not the only issues that may need to be negotiated when establishing a hemispheric free trade zone, but these areas of common action do seem to cover most of the issues relevant to subregional integration itself. At all events, this paper is designed to

provide an introduction to each issue and to serve as a first approach to the economic criteria on the basis of which an appraisal in greater depth could be carried out for the specific cases of individual countries or groups of countries in Latin America and the Caribbean.

I

Subregional integration and competitiveness

Subregional integration can help to increase competitiveness through its effects on efficiency, the incorporation of technical progress, and investment. The relation between these variables and subregional integration in Latin America and the Caribbean is described briefly below.

1. Efficiency

Thanks to the unilateral liberalization processes carried out in Latin America and the Caribbean since the 1980s, the potential costs of integration have been reduced, particularly as regards the costs that the relatively less developed countries would have to pay by importing goods from their neighbours at higher prices than they would have had to pay if they had bought them from countries which were not members of the integration agreements. Moreover, subregional integration may well permit intra-regional imports to take the place of goods previously produced less efficiently on a domestic basis, which, according to traditional customs union theory, will favour the consumer and free resources that can be used more efficiently to produce goods that can compete on regional or international markets¹. Also in line with the foregoing, it will moreover reduce monopoly rents and the resultant inefficiency of the unproductive agents associated with them.

¹For a discussion of trade creation and diversion at the hemispheric level, see ECLAC, 1990a. According to this theory, prior unilateral trade liberalization would reduce the possibility of diversion of trade, and intra-regional trade liberalization would result in the creation of more trade.

2. Technological externalities and technical progress

The integration and liberalization of markets can expand the effects of innovation by reducing the mean cost of technological research and development, increasing the efficiency and utilization of specialized inputs or support services, and generating technological externalities (Baldwin, 1989; ECLAC, 1990b). Thus, an expanded market would enable greater benefits to be derived from investment in research and development, by taking advantage of economies of scale and reducing the cost/sales price ratio. The standardization of regulations would have a similar effect and, together with the elimination of national barriers to competition in general, would increase the incentive for innovation through more intensive interaction among enterprises and heightened demands on the part of local consumers, as noted by M. Porter in the case of various industrialized countries (Porter, 1990). In addition, integration would create opportunities for taking advantage of economies of scale in other activities, including production and marketing, and these could be particularly important in the case of incipient export industries.

The establishment of an expanded market could also involve costs for the process of development and incorporation of technical progress, due to the geographical restrictions imposed on liberalization, which would affect one group of countries, but not others which are the international source of innovations and of possible technological externalities deriving from the presence of many innovators. Since these effects do not depend solely on the relations between goods markets but also on the closeness, intensity and nature of the inter-

action between the economic agents, however, there would be a possibility of weakening the negative effects of the discriminatory expansion of markets by means of institutional arrangements designed to take greater advantage of the positive effects of geographical and cultural proximity².

3. Investment

In the light of the foregoing, three effects of integration on investment may be identified. Firstly, assuming that investment is determined by its expected yield and the cost of obtaining resources, the greater efficiency resulting from the (net) benefits of more efficient resource allocation would result in increased income which, in turn, would lead

to increased saving and higher levels of investment. Secondly, both domestic and foreign investment would increase as a result of the higher yields deriving from liberalization, deregulation, economies of scale, innovations, externalities, and common standards. Both the former and the latter effects would help to increase or multiply the benefits due to the better (static) resource allocation, while the incorporation of technical progress associated with the investment would mean greater competitiveness. Finally, the expectations created by an expanded market, offering the possibility of bigger total profits, would help to increase both domestic and foreign investment and could give rise to greater bargaining power *vis-à-vis* big foreign firms.

II

Hemispheric integration and competitiveness

In view of the effects that subregional integration has on competitiveness, it may be concluded that hemispheric integration offers possibilities of further increasing or extending such effects, thereby giving rise to the possibility of a mutually favourable relation between the two processes. A brief description is given below of the ways in which hemispheric integration could expand the effects of subregional integration on efficiency, the incorporation of technical progress, and investment, especially by giving access to a secure expanded market.

1. Efficiency

Hemispheric integration's contribution to efficiency will depend to a considerable extent on the degree of trade liberalization previously achieved. If there was already some prior unilateral liberalization, the cost

of obtaining more expensive imports from North America under the terms of a preferential agreement with one or all the members of the North American Free Trade Agreement (NAFTA) will not be so heavy. This would be so in the case of Mexico. Moreover, according to traditional theory, benefits would be obtained from the displacement of inefficient Latin American and Caribbean products by those produced more efficiently in the member countries of NAFTA, especially the United States, since this would amount to the same thing as a unilateral lowering of protection. This may be considered to be the experience of Canada, for example, most of whose imports already came from the United States when free trade was agreed between the two countries. Thus, it may be considered that in Canada the benefits derived from trade liberalization through *imports*, with consequent reallocation of resources, were combined with those resulting from more secure access for Canada's *exports* to the United States market³.

²The externalities which exist at the local level because of close and continuous contact between agents of production can clearly be of the greatest importance, as is shown by the experience of Brazil (technology parks), the United States (Silicon Valley), or Germany (the Ruhr Valley). The encouragement of local externalities can be one of the fundamental bases for integration between border areas or between small neighbouring countries such as those of Central America. With regard to the interaction between agents of production, externalities and institutional arrangements in Latin America and the Caribbean, see especially ECLAC (1990b), pp. 71-73, 110-114 and 164-170.

³G.K. Helleiner makes a comparison of some of the central arguments used in the negotiation of the free trade agreement between the United States and Canada with those put forward in the negotiations between the United States and Mexico, noting how important assured access to the United States market was for both those countries. In contrast, Canada attached greater importance to the benefits deriving from the reduction of Canadian protection (creation of trade), whereas in Mexico the importance of this effect had already been reduced by the prior unilateral liberalization. See Helleiner, 1990.

2. Access to the North American market

The main trading partner of Latin America and the Caribbean in recent years has been the United States, which has accounted for rather more than one-third of the region's total imports and exports, albeit with substantial differences from one country to another (ECLAC, 1990a). The importance of maintaining open access to this market and further liberalizing trade with it is clear when it is noted that although Latin American and Caribbean exports to it have grown faster than those to other parts of the world, and at the end of the 1980s the United States was applying a weighted average tariff of only 2%, that country has been increasing its non-tariff protection measures in some areas (ECLAC, 1990a; Gonçalves and De Castro, 1989)⁴. One of the main benefits of hemispheric integration would be to put a stop to that trend.

At the end of the 1980s, non-tariff barriers were applied to 18.9% of the region's total exports (excluding the Caribbean and Central America), especially to clothing, iron and steel, yarns, fabrics and textiles, oilseeds, nuts, and agricultural raw materials. Argentina, Colombia and Brazil were the countries most seriously affected by these measures. Furthermore, the United States has traditionally been the country which has made most use of voluntary export restraints, countervailing duties and anti-dumping measures (Olechowski, 1987), as well as discriminatory means of exerting pressure such as Section 301. Easing tariff and non-tariff barriers, especially in the case of the United States, could therefore have a decisive effect on exports and domestic and foreign investment in Latin America and the Caribbean, although the problems inherent in an uncertain process of transition or

non-guaranteed access could reduce expectations or even make them negative.

3. Foreign investment and technological externalities

If Latin America and the Caribbean could gain assured access to a market as big as that of the United States, this could warrant particularly favourable expectations, especially because of the possibilities this would open up for attracting foreign investment and giving rise to a far-reaching continent-wide process of industrial reorganization, the implications of which are so vast that in reality they cannot be accurately gauged in advance. In these circumstances, particular importance would also be assumed by institutional arrangements between Latin American, Caribbean and North American agents which could lead to the generation and exploitation of technological externalities, especially with regard to the use of natural resources and skilled human resources.

However, the region should not wait for the establishment of an expanded hemispheric market, although the expectations in this direction would help stimulate new institutional arrangements. A significant item in this respect is that the Andean Group countries, as part of their lines of action vis-à-vis the Enterprise for the Americas, have adopted proposals for Andean-American technological research and development projects with business participation and for promoting the subcontracting of research and development projects by United States organizations to Andean bodies (SELA, 1991a). Such measures would help to stop the "brain drain" sometimes associated with the integration of two regions of different levels of development.

III

Integration and multilateral agreements

GATT's original proposals with regard to customs unions and free trade areas were designed to permit

⁴At the same time, tariff graduation results in some dispersion around the weighted average tariff of 2%.

these to be compatible with GATT, and according to traditional economic theory, preferential arrangements can increase the well-being both of the participating countries and of nations outside such agreements (Bhagwati, 1990). The relationship be-

tween the various integration processes and the degree of geographical discrimination and its effects will consequently depend on the specific features of the integration processes put into effect. Thus, for example, if the trade liberalization effects outweigh those of geographical discrimination, as posited in the following sections, integration will contribute to the formation of a less discriminatory international economy.

Furthermore, the Uruguay Round negotiations have shown that it is possible for the countries of the Western Hemisphere as a whole to form fruitful alliances on issues involving multilateral trade liberalization, as in the case of agriculture. This raises the possibility of a veritable strategic alliance, with hemispheric-level negotiations which could serve as a precedent for the adoption of non-discriminatory multilateral agreements, though they call for careful analysis in each case.

Thus, the application of safeguard rules in line with the criteria favoured by the United States in the case of the North American Free Trade Area (NAFTA), together with the intention to cover such issues as subsidies, public sector purchases and restrictions due to balance-of-payments problems in the case of the free trade areas which would form part of the Enterprise for the Americas in general,⁵ suggest the possible application at the regional or hemispheric level of the trade measures which were supported by the United States in GATT but on which it has not been possible to reach agreement at the multilateral level, although they could serve as precedents for subsequent agreements at that level.⁶ In addition, these areas could include "special provisions for managing trade and access to natural resources and natural resource-based products" (Frechette, 1991).

The emphasis placed by the United States on liberalizing the trade in services and eliminating

restrictions on foreign investment and the commercial exploitation of intellectual property is also well known. One argument put forward in favour of the negotiation of the free trade agreement between the United States and Canada, for example, was the possibility of making progress in the establishment of rules on those matters which, in view of the slow progress made towards such agreements in GATT, would serve as a precedent for the establishment of multilateral rules in a subsequent stage (Schott, 1989).

In view of the foregoing, there is a possibility that the Western Hemisphere may occupy a kind of spearhead position in multilateral liberalization, which would involve both risks and opportunities. On the one hand, subregional integration would help to lay precedents, as in the case of the agreement between the United States and Canada, which would favour the positions of the Latin American and Caribbean countries at the hemispheric level and would further the possibility that inter-American integration could make an effective contribution to the establishment of a non-discriminatory international economy in which the application of rules rather than the exercise of power prevails. One way of achieving this would be through the use of trade instruments which minimize the negative effects of discrimination while at the same time ensuring the benefits resulting from progress towards situations of greater liberalization.

On the other hand, due account should be taken of the multilateral angle and the possibility of transferring to that level—which is less disadvantageous for the weaker countries—the negotiations on issues such as safeguard clauses or subsidies and countervailing duties, where there are big differences between the less discriminatory position held by Latin America and the Caribbean, on the one hand, and the more discriminatory position of the United States on the other. In this sense, it is of the greatest urgency to make a clear appraisal of the results of the Uruguay Round and the possibility that the multilateral agreements on non-tariff barriers can be applied to trade between the free trade areas existing in the American continent.

⁵Statements by Myles Frechette on 12 June 1991: "The United States considers that the Enterprise for the Americas and the Uruguay Round are mutually complementary" (Frechette, 1991).

⁶From the point of view of Latin America and the Caribbean, as an importing region, another significant precedent could be the free trade agreement between the United States and Israel, which includes more severe provisions regarding the use of protection justified on the grounds of the existence of infant industries or balance-of-payments problems. See Aminoff, 1991.

IV

Subregional action

Although there will naturally be differences in the rate of progress of the various subregional integration schemes, it is reasonable to expect a process of convergence to facilitate the development of competitiveness, take advantage of hemispheric integration, and move towards a non-discriminatory system of trade and investment. Some of the issues which could give rise to convergent or common subregional action to facilitate that process are identified below. They are grouped under the headings of stabilization, trade liberalization, trade rules, factor mobility, institutional arrangements, and the process of transition.

A. The prior stabilization process

A prior condition for promoting a broad integration process in the medium or long term is that there should be a certain minimum degree of macroeconomic stability. There are three reasons for this. Firstly, the existence of big imbalances reflects, at least in part, internal weaknesses with regard to economic policy which must be overcome if the countries are to be able to define their priorities and strategies at the *national* level; once defined, these can form the basis for integration agreements with other countries. Otherwise, these imbalances will lead to failure to fulfil the commitments entered into with other countries and will thus undermine the whole idea of integration. Secondly, financial imbalances can give rise to variations in the real exchange rate and reduce the transparency of the policies applied, thus impeding reciprocal trade and capital flows. They may also heighten the differences which exist between countries by leading to the concentration of foreign investment in the most stable countries.

Finally, it must be borne in mind that the Enterprise for the Americas, as proposed by the United States, includes elements which unilaterally condition the eligibility of the beneficiaries. With regard to debt reduction, in particular, they include some criteria whose implications with regard to stabilization and adjustment (as well as foreign investment) are harsher than the terms of the Paris Club (SELA, 1991b). Although it is not yet clear how the criteria regarding trade liberalization will be established, the prior

achievement of stabilization would avoid conflicts over the interpretation of the conditions connected with this macroeconomic objective.

The foregoing does not mean that joint action before the achievement of stabilization should be completely ruled out, but it does mean that stabilization must be the primary focus of attention and cooperation in the first stage, based on the domestic efforts of each country. An example which may be mentioned in this connection is that of the regional action to promote the stabilization of Peru through the formation of a support group backed up by a number of Latin American countries both with individual financial contributions and with joint contributions made through the Latin American Reserve Fund (FLAR), which took the place of the former Andean Reserve Fund. Similar action could be carried out through comparable mechanisms in other subregions, as in the case of the Central American Monetary Stabilization Fund (FOCEM). It would not be necessary to reach broader macroeconomic cooperation agreements until progress had been made towards a higher degree of subregional or regional economic interdependence (ECLAC, 1991a).

B. Trade liberalization

Past integration agreements in Latin America and the Caribbean were generally centered on trade liberalization through the elimination of tariffs among the members of the integration group, including on occasions agreements for the application of a common tariff against third countries. Although this approach is still used, the current circumstances justify some rethinking of this approach to take account of real trade flows, the existence of non-tariff barriers, and relations with trading partners from outside the continent. These issues are considered below.

1. Expanded competitive markets

Liberalizing trade between individual Latin American and Caribbean countries and the United States or NAFTA in general involves liberalizing intra-regional trade too. Under a hemispheric free trade

agreement, existing intra-Latin American trade which had not yet been liberalized could be replaced by imports from North America that benefited from the agreement. This would mean the diversion of intra-Latin American and Caribbean exports in so far as the free trade agreement with the United States favoured North American products more than those of Latin America and the Caribbean.⁷ Eliminating this diversion would therefore call for the prior liberalization of intra-Latin American and Caribbean trade.

In the absence of such liberalization of intra-regional trade as a whole, the trade diversion in question could be minimized by establishing free trade among the countries with the biggest intra-regional trade: an approach which would tend to coincide with the already existing subregional integration schemes (table 1) and with the views expressed in this respect by the United States Government. It may be noted that trade *within* each subregion is greater than trade *between* the subregions of Latin America and the Caribbean, except in the case of the Andean Group, whose reciprocal trade is less important than its imports from the

MERCOSUR countries (particularly Brazil) (table 1). The operation of subregional or regional payments and monetary cooperation systems (Fuentes and Villanueva, 1989, pp. 197-202) and the elimination of the obstacles standing in the way of trade because of the intra-regional debt,⁸ would also help to avoid discrimination against internal trade in the region on account of foreign exchange restrictions.

It would not just be a question of establishing a form of free trade which would have a single, one-time resource reallocation effect in each subregion, however. It would also be necessary to adopt common technical rules and standards and consumer protection regulations; rules on competition which would reduce the incidence of restrictive trade practices; and regulations, incentives and taxes designed to preserve the environment and promote sustainable use of natural resources. This more demanding internal market, with limited protection against third countries, could form a basis for exporting to the rest of the world, and especially to North America.

2. Non-tariff barriers

Article XXIV of the General Agreement on Tariffs and Trade provides that free trade areas and customs unions compatible with GATT are those which involve the elimination of customs duties or other restrictive trade regulations applicable at least to the bulk of trade in products originating from the territories in question. As well as meaning, in the strict sense, that most or all subregional trade must be freed from the payment of customs duties, this also assumes the elimination of non-tariff barriers.

It would be possible to establish a preferential system of non-tariff barriers, like that used by the European Community for the developing countries which are members of the Lomé agreements, which includes for example the fixing of more favourable quotas for certain agricultural products, tuna fish and textiles, or the more flexible application of rules on origin and safeguard clauses (Stevens, 1986). The management of non-tariff barriers, regardless of whether they are discriminatory or not,

Table 1
GEOGRAPHICAL STRUCTURE
OF IMPORTS, 1989
(Percentages)^a

Destination: Origin:	MERCOSUR	Andean Group	CACM	CARICOM
MERCOSUR	14.1	9.0	2.9	2.8
Andean Group	3.1	6.6	7.3	4.4
Central American Common Market (CACM)	0.0	0.2	9.6	0.6
CARICOM ^b	0.1	0.2	0.2	6.0
Rest of Latin America and the Caribbean	3.7	3.7	8.3	2.0
United States	23.8	39.8	38.2	50.9
Rest of world	54.8	40.5	33.4	33.4
Total	100.0	100.0	100.0	100.0

Source: Calculated on the basis of ECLAC export data.

^aPercentages are weighted.

^bData for CARICOM only cover Jamaica, Trinidad and Tobago and Barbados.

⁷It should be borne in mind, however, that such replacement would give rise to the creation of trade if it took place even though products from both areas had the same treatment.

⁸See the set of articles in INTAL (1991) on the subject of proposals for reducing the intra-regional debt.

however,⁹ is administratively a more complex matter than the management of discriminatory tariffs, and it lends itself to a higher degree of arbitrariness, distortions, and pressure by interest groups. From the moment when subregional markets are set up, up to the culmination in a liberalized hemispheric market, therefore, it would be necessary to agree on the total elimination of non-tariff barriers, even if this were accompanied by some increase in tariffs in order to facilitate this transitional process.

3. Common external tariffs

From the point of view of more efficient resource allocation, a customs union is not necessarily superior to a free trade area (Robson, 1980, pp. 20-30). The existence of a first country with lower tariffs may mean that it can export all or part of its production to a second member country of the free trade area, while supplying all or part of its own needs with imports from the rest of the world. In the second country, there will be a positive resource reallocation effect to the extent that its less efficient production is replaced by the production of the first country, while in the latter country the government will receive greater tax income as a result of the increase in the country's imports from outside the free trade area.

Furthermore, a free trade area would reduce the possibility of making more expensive imports in the country with the lowest tariffs, to the extent that a common external tariff was reflected in higher (average) levels of protection. At the same time, it is probable that a free trade area will give greater flexibility and make it possible to advance more rapidly in subsequent negotiations with the North American Free Trade Area or the United States, particularly if levels of tariff protection are already low.

The absence of a common external tariff, however, will encourage smuggling, and as long as the tariff structures are different and there is a substan-

tial proportion of trade among the member countries of the free trade area, this could give rise to differentiated levels of protection and incentives which would favour inefficient allocation of investments among the countries. Geographical proximity of the countries would increase the possibilities of smuggling, while the importance of a differentiated incentive structure would increase if the structures of production were similar and interdependent. Since both phenomena would tend to be more important among the member countries of existing integration groupings,¹⁰ There would be appear to be more justification for the establishment of a customs union among some of these countries than at the continental level, since the distances and differences are greater and reciprocal trade is on a smaller scale. A common external tariff would also help to strengthen the image of joint negotiation, although a free trade area can also serve as a basis for this type of negotiation. Various groups have already set precise dates for the adoption of agreements on common tariffs as well as on free trade in goods (table 2).

Table 2
SUBREGIONAL INTEGRATION
TARGET DATES

	Common external tariff	Free trade in goods
MERCOSUR	1995	1995
Andean Group	1995	1992
Central American		
Common Market	1993	1992
CARICOM	1991	1991

Source: ECLAC (1991b): *La evolución reciente de los procesos de integración en América Latina y el Caribe* (LC/R.992), Santiago, Chile, 15 April, and data published in the press.

The nearest deadlines are in the case of CARICOM and the Andean Group, although there have been some delays with regard to the common external tariff of CARICOM, on which agreement was due as from 1990. In Central America, it has been agreed to establish a common external tariff with a ceiling of 20% and a minimum of 5% before 31 December 1992.

¹⁰The biggest differences would appear to exist within MERCOSUR, where there is some degree of contrast between the scale and degree of openness of Uruguay and Paraguay on the one hand, and Brazil on the other.

⁹In practice, it may be very difficult to determine when a non-tariff barrier is *not* discriminatory, since there may be different criteria for defining situations of equivalent treatment. In the case of quantitative restrictions, in particular, equivalent treatment may be based on the maintenance of market quotas, global licenses for importers, import permits made available to the first importers who apply for them, or the auctioning of permits or licenses on the free market.

4. Trade with individual member countries of the North American Free Trade Area or of the region

Although the formation of subregional groups might be seen as the only step before integration with the United States, consideration should also be given to the possibility of various combinations, including intermediate or simultaneous stages in this process. These could involve integration among existing subgroups or the integration of subgroups with the North American Free Trade Area, individual Latin American and Caribbean countries, or individual member countries of NAFTA.

Potential examples of the latter approach are the framework agreement jointly negotiated by the member countries of MERCOSUR with the United States, the agreement to set up a free trade area between Mexico and Central America by 1996, and the commitments for the establishment of a free trade area among Mexico, Colombia and Venezuela for 1992. In the case of adjoining countries, the tariff levels of the participating countries take on greater importance, for the reasons already explained earlier.¹¹

The recent integration process based on the establishment of free trade areas shows the desirability of organizing the subregional groupings on a flexible basis in order, in particular, to facilitate the entry of new member countries into the existing groupings. This would also avoid or reduce the costs due to the proliferation of discriminatory arrangements and their administration, since all the countries would have the same sense of direction aimed at furthering trade liberalization and the development of the international competitiveness of the participating countries.

In the case of the countries which are beneficiaries of the Caribbean Basin Initiative, it could also be important to expand the geographical scope of their negotiations to include an agreement with NAFTA. Although they already have some significant access to the United States through the special

preferences they enjoy, the same is not true of the Central American countries' trade with Canada or that of the Central American and Caribbean countries with Mexico. The agreement between Mexico and Central America which is scheduled to come into effect in 1996 could be partially equivalent (although on a broader scale, since it involves a free trade area based on a certain degree of reciprocity) to the preference scheme which Canada already has with the Caribbean.

Negotiations similar to those of Central America with Canada and the Caribbean with Mexico would form a convergent process aimed at establishing a free trade area involving most of the Northern Hemisphere American countries. The small size of these two subregions should facilitate their entry into NAFTA. This access to the expanded North American market would at least partly compensate for the erosion in their preferences with the United States (and also, in the case of the Caribbean, with Canada) caused by the establishment of NAFTA, and it would be an element which should be given emphasis in the negotiations,¹² including those with the United States aimed at obtaining greater security and access for the most important export products of Central America and the Caribbean, such as textiles, leather goods, sugar and meat.

In discussing future relations with NAFTA, it would be desirable to evaluate various access paths which could assume different forms depending on: a) the possibility of reaching agreement with all or some of the members of NAFTA or b) joint or individual action by countries seeking to reach agreement with the NAFTA members. Chile could be an example of individual action whereby, after reaching an initial agreement with Mexico, it would proceed to negotiate an agreement with the United States or with NAFTA as a whole. The Central American countries would appear to be following the same path, but on a collective basis and with a greater time lag. MERCOSUR and CARICOM would appear to be favouring joint negotiations with the United States which could eventually lead to an agreement with NAFTA. The bargaining power, the

¹¹It would be possible, for example, to imagine a hypothetical situation of trade creation in which, *ceteris paribus*, the country or group of countries with higher tariffs (such as the Central American countries, for example) would import products from a member of the customs union with lower tariffs (Mexico), which in turn would supply part of its market through imports from a third country (the United States), without all this trade being affected by the application of rules on origin.

¹²This could be expected to give rise to a triangular negotiating effect: the concessions granted by the United States to Mexico would be linked with the concessions which Mexico would give to the Central American countries, which would thus be compensated for the erosion in their preferences with the United States due to the Mexico-United States agreement.

speed with which agreement is reached, and the costs of the transaction will vary in each case, depending on the path followed, but in all cases the content of a clause permitting access to NAFTA would appear to be of fundamental importance.

5. Trade barriers against third countries

The Enterprise for the Americas may be interpreted as the recognition and desire for consolidation on the part of the United States of the gradual process of economic liberalization, including trade liberalization, which has been carried on in most of the countries of Latin America and the Caribbean.¹³ It may be seen as representing a credit which had hitherto been denied at the multilateral level, despite the pleas of the developing countries in this respect (Inside U.S. Trade, 1991; Whalley (ed.), 1991, pp. 75 and 76).

An important cost of the hemispheric preferential trade liberalization agreement would be the diversion of the flow of imports from outside the region, which would mean importing North American, Latin American and Caribbean goods that would cost more than goods from outside the region, net of tariffs. The greater the margin of preference given to hemispheric products through protection against third countries, the higher the cost of this diversion, which would also depend on the proportion of imports coming from third countries. Reducing this cost would mean lowering tariffs and/or eliminating non-tariff barriers affecting imports from third countries. If this continued to be difficult to achieve at the multilateral level, this would justify negotiations with other blocs, provided these gave due credit for the unilateral liberalization of trade by Latin America and the Caribbean. It would therefore be necessary for the subregions and the individual countries of the region to group themselves together in order to negotiate jointly with other countries or blocs such as Japan and the European Community.

Table 1 gives a broad idea of the relative magnitude of the cost of diverting trade for each integration subgrouping in Latin America and the Caribbean in general. These costs would tend to be

less, *ceteris paribus*, in the Central American and Caribbean countries, where the proportion of imports from outside the region comes to approximately 33% of total imports, but in the MERCOSUR countries this proportion is significantly higher, amounting to some 55% of their total imports. The Andean Group countries, for their part, would be in an intermediate position, with a figure of 41%. This would mean that MERCOSUR, followed by the Andean Group, would be the groups of countries which, in view of the higher potential costs of a discriminatory hemispheric agreement, should have more interest in negotiating reciprocal trade liberalization agreements with other groups of countries.

C. Rules affecting trade

The multilateral trade negotiations carried on in GATT are an illustration of the difficulties encountered in reaching agreement on such issues as subsidies, countervailing duties and safeguard clauses. They also reflect the growing importance being attached to environmental issues. At the same time, the problem of the origin of goods becomes a central issue in the event of the establishment of a free trade area. Together, these issues involve rules which have an increasing effect on trade, so that it is necessary to define the contribution that subregional integration should make to each system of rules. This is dealt with in the following sections.

1. Subsidies, countervailing duties, and antidumping practices

The fact that the United States is the country which most frequently applies countervailing duties to exports receiving subsidies, the absence of any common definition of subsidies within GATT (although there is an international code of conduct on them), the pressure on fiscal resources, and a certain tendency to use the threat of countervailing duties ("harassment") as a protectionist practice, justify the view that it is inadvisable to use direct subsidies to promote exports (Finger and Nogués, 1987). A step forward in this direction would be the elimination of subsidies on Latin American and Caribbean exports to member countries of subregional groupings, as indeed is already the case in

¹³According to Myles Frechette, the Enterprise could not have been conceived without the impressive commitment to economic reform, liberalization and democracy undertaken in recent years by each of the Latin American nations (Frechette, 1991).

such areas as Central America, since this would avoid conflicts between exporters and domestic producers and controversies over incentives in the region (Fuentes and Villanueva, 1989, p. 180).¹⁴

The possibility of suffering the application of countervailing duties would also be reduced if public expenditure were channelled towards indirect subsidies aimed in particular at strengthening human capital, such as training, advisory assistance and technical research and development: areas for regional or subregional action in which significant economies of scale can be achieved and the recent arguments in favour of selective stimuli can be applied.¹⁵ At the same time, it would be necessary to *keep up* the negotiations on subsidies and countervailing duties in GATT, where the advantages of a multilateral environment for the weaker countries are clearly evident. Furthermore, in the negotiations on this issue the confrontation is fundamentally between the United States and the other countries (including the developing countries, Japan and the European Community),¹⁶ in contrast with regional or bilateral negotiations with the United States, where the region's negotiating power might be smaller.

At the same time, it would be necessary to take into account the possibility that the *imports* of Latin American and Caribbean countries might be affected by subsidies and trade practices warranting the application of countervailing duties or antidumping practices. This could be particularly important in the case of agricultural products. Adopting strict legislation in this matter would be in keeping with a position calling for the elimination of subsidies as an export promotion instrument, but it would be necessary to take into account the effects of this position on consumers and the possibility that it would merely amount to yet another instrument of protection. Thus, a

code on antidumping practices or countervailing duties applied jointly, as proposed in the case of MERCOSUR or the Central American Common Market, while having the advantage that it is an instrument against the use of subsidies that distort trade, may also possibly mean higher-priced intra-regional imports.

In general, when implementing agreements on countervailing duties or antidumping practices it would be necessary to compare their costs and benefits in the light of two effects: those resulting from the prevention of subsidized imports and those resulting from the need to pay more for imports. It would have to be borne in mind that in the case of subsidized imports, the distortions resulting from having to pay more for imports might affect only consumption and not production, since exports might be produced more efficiently by a country which does not subsidize them, as in the case of Argentine agricultural products compared with those of Europe. At the same time, it is obvious that it would also be necessary to evaluate the political effect of joint action of this type on the international use of subsidies, especially in the light of the multilateral trade negotiations within GATT.

The application of countervailing duties and antidumping practices makes it necessary to define suitable machinery for settling disputes arising over them. At the subregional level, such machinery would help to reduce the likelihood of unilateral action, and its importance as a precedent at the inter-American level would be increased by the fact that the history and legal background of most of the countries of Latin America and the Caribbean are different from those of the United States and Canada. The subregional action could be aimed at advancing towards the use of the multilateral machinery of GATT in these matters, which would call for an increase in GATT's capacity to impose sanctions, so that it could effectively help to prevent unilateral action by more powerful countries.

2. Safeguard clauses

The United States and other developed countries have generally preferred to impose *bilateral* restrictions on imports instead of applying Article XIX of GATT on safeguard clauses, which, unlike

¹⁴The elimination of subsidies which would tend to give rise to countervailing action at the international level does not rule out the possibility of granting export credits, which could also include subsidized interest rates.

¹⁵I refer to the growing academic literature on strategic trade policy, especially the possible justification of tariffs or subsidies aimed at developing incipient national industries of a strategic nature and policies for altering the distribution of monopoly gains. See, for example, Krugman, 1987.

¹⁶While the United States tends to emphasize the need for discipline with regard to subsidies, the other countries emphasize this need with regard to countervailing duties.

countervailing duties and antidumping practices, must be applied without discrimination and are subject to compensation. Since they are an alternative to other discriminatory measures, the relative reluctance to apply safeguard clauses has its counterpart in the application of various other discriminatory trade barriers, such as voluntary export restrictions, market management arrangements, and sectoral agreements.

Since the United States Government aims to apply safeguard measures in NAFTA which are broadly similar to those applicable to Canada (United States, 1991), the free trade agreement with that country, which provides for a dual means of application of safeguard measures, assumes importance as a precedent. It provides, on the one hand, for the use of Article XIX of GATT, which is not discriminatory, but it excludes its application to Canada when the latter country's exports are not "substantial" or do not make an "important" contribution to the damage done, and on the other hand it provides for bilateral procedures involving restrictions that can be applied for a maximum of three years in cases of "serious" damage. From the point of view of Canada, this limit of three years and the possibility of being excluded from the general application of safeguard measures represent concessions obtained in its negotiations with the United States, but the controversial definition of "damage" remains subject to the interpretation given to the laws of the United States (Kymlicka, 1987).

The application of safeguard rules at the level of NAFTA as a whole could be interpreted as a tendency towards the regional application of this type of restrictions, with the consequent likelihood that the United States will seek to apply them to the free trade areas with the Latin American and Caribbean countries in general. It would be necessary to take account not only of their implications for access to the North American market and the concessions won by Canada in this respect, but also their effects as instruments of protection in Latin America and the Caribbean, while it would also be necessary to consider the possibility of signing prior subregional agreements in keeping with the conditions of the countries making up the area.

The latter action could form part of a gradual process of accumulation of precedents, begun at the subregional level but supplemented with active

negotiations at the multilateral level; at the same time, the application of safeguard measures should be subject to independent and transparent appraisals of the alleged material damage and should be based on the use of temporary restrictions, preferably *ad valorem* tariffs.¹⁷

3. Rules on origin

There is a danger that there may be considerable broadening of the criterion on which the use of rules on origin is normally based: namely, to prevent the diversion of trade due to tariff differences among the countries making up a free trade area. The importance attached to rules on origin by the United States in the free trade area with Mexico is due basically to the possibility that that area could serve as a means for the indirect introduction of goods from Japan and South East Asia, but the degree to which such goods are subjected to processing in Mexico is an important issue for debate.

There are four considerations which should be taken into account here. Firstly, the looser rules on origin are, the smaller will be the amount of diversion of trade resulting from a free trade area, since such rules are equivalent to additional measures discriminating against trade with third countries. At the subregional level, rules on origin which demand high national or subregional content may strengthen the diversionary effects of a high external tariff. Secondly, and as part of the foregoing, rules on origin which are applied very strictly may have a frankly protectionist nature and may serve to restrict the access of exports of a member country of the free trade area to another country. This occurred, for example, in the case of the free trade agreement between the United States and Canada, with regard to textiles and clothing. Thirdly, in the case of rules on origin which implicitly discriminate according to the origin of the capital involved, the determining criterion would seem to be whether or not oligopolistic rents (and wages that incorporate such rents) are obtained, since alternative rules on origin based on the degree of processing or added value could mi-

¹⁷There are also other safeguard mechanisms which are not analysed in this article. The best known of these is probably that which permits the application of restrictions on imports for balance-of-payments reasons, as provided for in Article XVIII-B of GATT (GATT, 1985).

nimize the impact of trade on direct and indirect employment.

Finally, the fact that the weaker economies generally have less capacity to export products with a higher proportion of added value or national inputs would imply that very strict rules discriminate against such countries. This would therefore justify the application of rules on origin which are not excessively strict at the subregional level, and this, as in the case of other issues, could have some importance as a precedent with regard to hemispheric integration.¹⁸

4. Public sector purchases

The formal proposals made in the past that public sector purchases should be used to promote integration, especially within ALADI or the Central American Common Market, have not been put into practice. This has been due to the higher cost of imports from countries of the region compared with those from the rest of the world, which are also often available on more favourable financing terms or with direct subsidies: a consideration which has been all the more telling in view of the deterioration in the fiscal situation of the governments concerned. In some infrastructural projects, however, preferential treatment has been given to construction and engineering enterprises of the region, and this shows the possibility of using public sector purchases as an instrument that can serve, through common rules and co-investment agreements, to promote the generation and absorption of technological externalities at the regional or subregional level. There are also some concrete examples of joint purchases of goods, as in the case of purchases of medicines by the social security institutions of the Central American countries, in order to reduce costs.

The costs and benefits associated with subregional or regional action in this field have their counterpart in the multilateral regulations reflected in the GATT code of conduct on public sector purchases, which calls for the extension of "national treatment" to imports of goods (but not services)

¹⁸The possibility of using rules on origin of a cumulative nature, which treat value added in neighbouring countries or in member countries of integration schemes as though it was national value added would, for their part, reduce the likelihood of diversion of intra-Latin American or Caribbean trade within a hemispheric integration scheme.

from GATT members, thereby expanding the access of such exports to new markets. The code only applies to purchases over a certain level made by Government institutions which are explicitly subject to the code as a result of negotiations providing for the exchange of concessions. In the case of the agreements by the United States with Israel and Canada, national treatment is extended to the same institutions, but for a total value of purchases below the threshold level agreed upon in GATT.

At the subregional level, an alternative worth considering could be the signing of agreements with a limited number of institutions in respect of a similarly limited number of products or services, and with lower threshold figures, in sectors where the positive effect of the resulting technological externalities would be greater than the possible negative effect of the costs resulting from the higher-priced imports. At all events, this is an important instrument for promoting selective cooperation relations among Latin American enterprises which are competing with each other and among technological research and development enterprises and bodies. It also involves expediting the exchange of information in order to create possibilities for joint purchases. Subregional integration action in this field and the eventual incorporation of Latin American and Caribbean governmental bodies under the GATT code of conduct would be compatible with these objectives, provided that the subregional action was in keeping with one of the following conditions: that it should cover services, extend preferential treatment to a threshold level lower than that applied at the subregional level, or include different institutions in both agreements. Similar considerations would also be valid at the inter-American level.

5. Natural resources and the environment

Joint treatment of the issues of natural resources and the environment is justified not only by their political importance in general, but also by their growing incidence on trade. This has been reflected in the negotiations between Mexico and the United States on specific problems such as tuna-fishing; in the concern of North American ecological groups about the links between investment and trade and the environment; in the reintroduction of the issue in GATT as a result of an initiative by the

EFTA countries; in the danger that arguments in favour of the environment may be used as instruments of protection; and in the very significant potential incidence of environment regulations on trade (Whalley, 1991). In addition, it is necessary to bear in mind the abundance of natural resources in most of Latin America and the importance of the question of the access to their exploitation, which is a central issue in the negotiations between the United States and Canada on the liberalization of restrictions on foreign investment.

Within subregional integration, little has been done in this area, with the possible exception of proposals for border integration aimed at the joint exploitation of the resources of shared regions. The fact that this is a new area gives the region ample scope for taking initiatives, and this opportunity must not be wasted. Regulations and incentives aimed at preserving the environment and promoting the sustainable utilization of natural resources can have two implications. Firstly, the fact that in Latin America and the Caribbean higher relative priority is given to the sustainable exploitation of natural resources (an item relevant to the level of living) than to protection of the environment (which is relevant to the quality of life) is reflected in a market for goods and services for environmental protection which has its own special features and can largely be supplied by the more industrially advanced countries of the region (ECLAC, 1991c, pp. 89-90). The establishment of demanding standards and suitable incentives could facilitate the transformation of the various subregional markets into bases for exporting to the rest of the world. Because of the special features and greater requirements of the region, the equipment and services in question could have a certain competitive advantage which could enable them to fill some niches in the international market. Secondly, in this context the increasingly high social value attached to environmental rules on products, production processes and raw materials could convert them into an instrument for the differentiation of natural resource-based products which could be useful in international markets where there is only sluggish demand (ECLAC, 1991d, p.30).

Furthermore, the use of certain common standards, possibly combined with the application of taxes in the case of exports of non-renewable natural resources in order to reflect their opportunity cost, would tend to be more compatible with a type of trade governed by transparent rules than the use

of various direct controls of national origin. However, environmental policies or regulations involve a very high demand for information, and serious problems of concertation among the countries may be expected when it becomes necessary to tackle specific regulatory aspects, as the experience of the European Community has shown (ECLAC, 1991d, pp. 111-112).

Consequently, an intensive prior process of research, discussion and interaction would be called for among the public and private agents connected with environmental matters in the various countries in order to be able to progress towards the establishment of common rules and incentives at the subregional or regional level. The execution of joint research work and the exchange of information by universities, technological institutes and consultancy enterprises of the various countries could therefore serve as a basis for the adoption of coordinated or joint policies by the subregions concerned. Such initiatives could be strengthened by interaction with entrepreneurs of the region who might wish to participate in them in order to take advantage of the expected dynamic regional market for environmental goods and services, and this would contribute both to the export of such goods and services outside the region and to the export of natural resource-based products which might be used as inputs.

D. Factor mobility

The establishment of a free trade area at the hemispheric level, with the consequent expected liberalization of trade in services and foreign investment, would facilitate the mobilization of "factors"; indeed, strictly speaking one should not speak of a "free trade area" but should rather have in mind something more ambitious such as an "expanded economic space".

Likewise, the fact that trade in services often implies the mobility of factors, including capital, and that direct investment of foreign capital involves the exploitation of technological assets subject to various degrees of legal protection, highlights the close links that exist between services, foreign investment and intellectual property. It may also be expected that the United States will assign particular priority to the achievement of agreements with the Latin American and Caribbean countries in these areas, where the negotiations at

the multilateral and hemispheric level are interdependent.¹⁹ The role of subregional integration in this context is analysed below.

1. *Services and mobility of labour*

In view of the "non-accumulative" nature of most services, their provision involves direct contact between suppliers and users, which may involve the mobility of both these agents and, in the case of the supplier, calls for the mobility not only of capital but also, at least temporarily, of various types of labour.²⁰ This explains the importance of the right of establishment as a fundamental conditioning factor in the trade in services, although this right must also be accompanied by provisions permitting at least a minimum of mobility of skilled labour.

While the United States tends to emphasize the importance of the right of establishment in a restricted sense, minimizing the contribution of labour and stressing rather the contribution made by capital or foreign direct investment, in seeking to promote the integration of services at the subregional or regional level it is necessary to attach importance to the contribution made by labour of varying levels of skills. While recognizing the mass of difficulties and special situations involved in the harmonization of the regulations on services of very different types, it is nevertheless necessary to promote their liberalization (for example, of engineering and construction enterprises) at the regional or subregional level by assigning at least as much priority to the mobility of skilled or semi-skilled labour as to the intra-regional mobility of capital. Even-handed treatment of the mobility of capital and of labour deserves close attention in this context. This would be fully in line with the promotion of the generation and absorption of technological externalities and the establishment of some precedents in the matter of services; furthermore, it would be in keeping with the conditions of the region, and it could help to strengthen the region's bargaining position on these issues.

¹⁹Myles Frechette states that the United States hopes that the success of the Uruguay Round will establish basic international standards for trade in services, protection of intellectual property rights, investment yield requirements and other equally important areas, which would considerably facilitate the negotiation of free trade agreements in the hemisphere (Frechette, 1991).

²⁰As Bhagwati (1987) notes, there are also some accumulative cross-border services, such as data transmission, and others which involve the mobility of the consumers, such as tourism.

Just as in the case of trade in goods, the diversion of trade that could result from more favourable treatment for North American or regional suppliers compared with those from the rest of the world could also be important in the case of services. This would be particularly so in the case of producer services, which are in the nature of an intermediate input²¹ and could therefore affect the competitiveness of exports. Consequently, in the event of the existence of regulations or restrictions on the supply of external services, liberalization of the conditions regarding the right of establishment would also justify some liberalization of the regulations affecting third countries, in order to minimize the costs due to diversion, or else there should be rapid negotiations with such countries in order to obtain some concessions in exchange for such liberalization.

It has also been argued that in view of the relatively limited benefits that the United States would obtain from the free trade agreements in the field of trade proper, its main objectives are likely to be centered on obtaining concessions in the area of services, foreign investment and intellectual property (Helleiner, 1990). These tactics would be in keeping with the position initially maintained by that country with regard to the Uruguay Round: namely, making concessions over goods in exchange for the incorporation into GATT of the issue of services, foreign investment and intellectual property. In view of the foregoing, the need to set up subregional or regional precedents becomes important when the scanty past experience with regard to services in the subregional integration schemes (with the partial exception of CARICOM) (ECLAC, 1988) is contrasted with the gradual process of establishing rules on trade in services promoted by the United States. Thus, the free trade agreement between the United States and Israel includes a "framework treaty" on trade in services, with a commitment to hold negotiations on the rules applicable to services, and the later agreement with Canada covers the major part of trade in services, providing for the right of establishment and national treatment, although the "cultural" industries (radio, television, publishing and recording) are excluded. Some recent initiatives such as the liberalization of air transport in the Andean Group and the

²¹With regard to the relation between some services and competitiveness in Latin America and the Caribbean, see ECLAC, 1990b, pp.137-143.

active position taken by Latin America and the Caribbean in the Uruguay Round on the subject of services, together with their initiatives in this respect,²² provide a solid basis for future understanding on these matters.

2. Intellectual property

It is obvious that the United States Administration assigns great importance to the controversial issue of intellectual property, including in particular the protection of pharmaceutical patents, and it is equally clear that the basic motive behind foreign direct investment is to internalize a number of economic relations in order to ensure the exploitation of that country's technological assets (Helleiner, 1988). Consequently, considerable importance is assumed by the need for policies or regulations that will facilitate a certain amount of dissemination of technology (in such areas as management and marketing, for example), even though they may not concern the central technological asset (such as production technologies or specific processes) of the foreign firm.

Various countries are already in the process of modifying their legislation on intellectual property. In this respect, there is every justification for harmonizing such legislation at the subregional level. This could guarantee the exploitation of the technological assets of firms within certain time limits, thus giving greater security. At the same time, however, it would be desirable to promote the use of technological externalities through the dissemination of information on patents among businessmen and the stimulation of related activities which could include, for example, the proposals on science and technology made by the Andean Group with regard to the Enterprise for the Americas (SELA, 1991a). The Andean Group, whose subregional rules on various aspects of intellectual property are currently under review, could serve—like the European Patents Office—as an example of integration in this field, backed up by a parallel process of negotiation on these issues in the relevant multilateral forum.

3. Foreign investment

Secure access to the North American market, and, in more general terms, the gradual establishment of

a hemispheric market for goods and services, would lead as one of its main effects to the expansion of foreign investment both from inside and outside the region. The experience of the European Community, which has registered a significant increase in foreign investment in mergers, acquisitions and agreements for joint operation with an eye to the 1992 unified market, shows what could happen in an expanded Latin America and Caribbean market (OECD, 1990, p. 8). Its effects are contradictory, however. On the one hand, it makes it possible to take advantage of—and is itself part of—the economies of scale in production, marketing and technological development which imply greater efficiency and competitiveness and are an inherent part of any integration process, but on the other hand, it also implies the possibility of restrictive trade practices which run counter to efficient resource allocation and could prejudice consumers or involve restrictions on exports, among other effects.

It is necessary to draw a distinction, in this context, between the regulation of foreign investment in general and the more specific rules on requirements with regard to national content and exports which are the subject of negotiations promoted by the United States inside and outside GATT. With regard to the first of these, the Enterprise for the Americas provides for resources to stimulate reforms aimed at facilitating foreign and national investment, and this could serve as an opportunity for harmonizing legislation at the subregional level, which, as well as reducing the costs associated with the interpretation of different laws, would give investors greater security by reducing the probability of unilateral changes in a particular country's legislation. The possibility of establishing investment contracts which have a common format could be a step in this direction. This would have to be compatible with legislation to promote the establishment of multinational enterprises of a subregional nature, such as the special regime for CARICOM enterprises.

At the same time, it would be necessary to evaluate the complex relations which exist between trade-related investment measures (TRIMS), which are under negotiation in the Uruguay Round, the restrictive trade practices of transnational corporations, and rules on origin which discriminate according to the nationality of an enterprise's capital.

²²See in particular SELA (1990).

It should be hoped, for example, that the liberalization of (public) export requirements would coincide with the (private) elimination of restrictions on exports (through technology transfer agreements, for example) and with the elimination of rules which (as in the case of the North American agreements on motor vehicles, which lead to the *de facto* exclusion of Japanese and European investments) operate in practice as rules on origin based on the criterion of the national origin of the capital.

E. Institutional arrangements

In view of the existence of technological externalities, it is considered appropriate to refer below to some features of institutional arrangements which could promote the generation and appropriation of such externalities. Some requisites of public integration institutions are also identified in the light of the foregoing.

1. Arrangements for promoting innovation

A distinction must be drawn between two types of institutional action or cooperation which could help to promote the generation and appropriation of technological externalities: arrangements based on sectoral criteria, and those based on criteria of a geographical nature. In the first case, what would be involved would be the promotion of joint action in sectors where countries share the view that priority should be given to the aim of achieving or maintaining levels of technological excellence. This action would represent the points of convergence of areas subject to selective technological policies at the national level, and could take the form of strategic alliances between enterprises and governments, while it could also include cooperation in research and development activities at a pre-competitive level, or cooperation in the areas of technology, production or marketing between enterprises which do compete with each other. The relations between the enterprises could be either vertical (supplier/user) or horizontal (common use of technological, financial, information or marketing services), normally in connection with particular integrated production systems.

Since natural resources and relatively low-cost labour (skilled or not) may be considered as the

fundamental sources of the competitiveness of Latin America and the Caribbean, in principle there would be a good deal of justification for favouring strategic alliances between enterprises, or between enterprises and governments, to promote the generation and assimilation of technological externalities involving these two factors. Potential examples of such arrangements would be the agreements by Brazil and Argentina on biotechnology, the Latin American Association of Capital Goods Producers (ALABIC), and the possible arrangements between entrepreneurs and bodies of various countries for the supply of goods and services relating to the environment.

Secondly, it could be particularly appropriate to seek arrangements designed to take advantage of geographical and cultural proximity, which, when accompanied by similar structures of production and the same or very similar availability of natural resources, would serve to stimulate an intensive and high-quality interaction between the various agents responsible for production and innovation. Arrangements which, in the case of industrialized or large countries, would involve the establishment of *national* systems of innovation, would probably need to be adapted to promote the establishment of *subregional* systems of innovation sharing the same well-defined sense of direction, combined with a high degree of local autonomy. These systems could be made up of various nuclei or conglomerates of enterprises and institutions with national or subregional bases of operation, depending on the scale of the industries, countries or subregions in question. A typical example of a component of a subregional system of innovation would be the University of the West Indies in the Caribbean (ECLAC, 1990b, p. 167).

It should be emphasized that arrangements based on sectoral criteria are a necessary but not of themselves sufficient condition for promoting the development and application of technical progress. Only in the presence of an effectively expanded, secure and liberalized market which stimulates competition and the need to apply innovations could these arrangements become sources of technical progress effectively applied to regional production. Arrangements based on geographical criteria, for their part, would strengthen the effects of sectoral institutional arrangements and a competitive market but would not of themselves be a sufficient or necessary condition for this.

In the case of both institutional arrangements of a sectoral nature and those of geographical origin, there would be room for agreements on common rules or standards, preferential public sector purchases, financial institutions which facilitate the conversion processes and give wide dissemination of information on their features, subsidies for projects in which several enterprises participate, and legislation favouring the mobility of skilled personnel between countries. Generally speaking, and in view of the fact that the cost of establishing a close (strategic) cooperation relationship between enterprises is considerably reduced once that relation has been established, especially when initial relations of competition exist, there would be justification for giving temporary public incentives to promote progress in this direction.

2. Public institutional arrangements

In the light of what was stated in the foregoing sections, the subregional integration institutions should be reformed in two ways. Firstly, their technical capacity for international trade negotiations should be strengthened, bearing in mind the links between the subregional, hemispheric and multilateral negotiations and the economies of scale resulting from the joint procurement and processing of information, as well as joint technical work. Secondly, steps should be taken to increase their capacity to arrive at agreements with the public and private sectors, including the achievement of agreements aimed at furthering innovation.²³ This latter objective would call, in particular, for an increase in their capacity to handle the coordination of technological development at the sectoral and subregional level.

The above reforms would involve internal reorganization and measures designed to give the institutions greater flexibility and capacity to provide a rapid response, together with information facilities which would permit the ongoing exchange of information among institutions, between them and their governmental forums, and between both of these areas and the productive sectors. This exchange of information could reduce the uncertainty regarding what each country, group of countries or group of entrepreneurs plans to do, thereby faci-

tating collective action. Reforms might also be needed in the intergovernmental forums governing these institutions, so as to secure the direct involvement of the national authorities responsible for inter-American and multilateral economic negotiations and to ensure that national priorities with regard to competitiveness are reflected in these forums.

F. The process of transition

With a reduction in the diversion of trade, accompanied by more efficient resource allocation due to the creation of trade and more demanding and competitive markets, a process of transition involving substantial costs may be expected. One potential negative effect of the establishment of a hemispheric free trade area would be the elimination, as a result of trade liberalization, of incipient, recently established or developing industries whose failure or elimination because of their currently negative performance would not be justified if account were taken of their higher performance in the long term. The same would be true of the failure of established industries which, if there were a longer transitional process, could turn themselves into competitive industries. Because of the imperfections in capital markets, or simply the unsuitable policies applied in the past and the absence of reliable information on what will effectively happen with regard to various industries or firms in the future, the elimination of certain industries may be seen as one of the costs (and not one of the benefits, associated with better resource allocation) of the liberalization process.

In addition, there will generally also be a process of transition which involves the reallocation of investments and labour to new activities, but with a certain delay. This will mean temporary unemployment, which is an issue of importance not only for Latin America and the Caribbean but also for the United States and Canada. Thus, a sudden process of trade liberalization may, in the short term, require very large amounts of financial resources in order to facilitate the process of adaptation and training of labour and the conversion of enterprises which could eventually become competitive, as may be seen from the case of East Germany.

²³With regard to the relation between innovation and institutions, see Pérez (1989).

Prior subregional integration could facilitate this transitional process by three means. To begin with, the liberalization of trade in goods and services within the subregions and possibly between some of them would represent a prior transition which, because of its smaller geographical coverage, would involve, *ceteris paribus*, a smaller need for adjustments than at the hemispheric level.

Facilitating *gradual* transition may also be negative for Latin America and the Caribbean, however. In the free trade agreement between Mexico and the United States, the Administration of the latter country foresees transitional periods—even longer than the periods of up to ten years provided for in the agreement with Canada—in order to facilitate the adjustment of its industries and the adaptation of its workers in some sectors considered to be sensitive to imports, as well as providing for the application of safeguard clauses in the event of increased imports which damage local production (United States, 1991). Since there is some reciprocity at the hemispheric level, the scope and duration of the transitional process should be such as to ensure effective access within a fixed term in order to avoid an indefinite transitional process which might result from perverse application of such reciprocity.

The second form of contribution of the subregional integration processes, then, would be to ensure rapid transitional processes at the subregional level, as a precedent, and to help, through negotiation, to define transitional processes which are not incompatible with subsequent firm and secure access to the North American market.

The third potential contribution by Latin American and Caribbean integration could be in the area of reciprocity. It should be borne in mind that the negotiations between Latin America and the Caribbean and the United States will involve reciprocity, even though this may not be on a totally even-handed basis. The achievement of such reciprocity would give greater security to the trade concessions obtained, because there would be North American export interests which would benefit from the agreement by gaining access to other markets and which would form a pressure group in favour of keeping the North American market open. In more general terms, reciprocity directly links the current actions of a country with the benefits that may be expected in the future, thus reducing the advantages of possible unilateral abandonment of what has been agreed upon and improving the prospects for cooperation. Where there are different levels of development, however, rapid simultaneous liberalization may be prejudicial to the country of lower relative development involved. In this respect, prior agreements among groups of countries in Latin America and the Caribbean can be used to establish precedents with regard to reciprocity: Venezuela's offer to open up its market to the exports of the members of the Central American Common Market and CARICOM in the short term in exchange for *subsequent* liberalization of the Central American and Caribbean markets could be useful when the moment comes for reaching agreement on liberalization between the various countries of Latin America and the Caribbean and the United States and Canada.

V

Conclusions

On the one hand, subregional integration can serve as a precedent for subsequent non-discriminatory agreements, while on the other it can create favourable conditions for growth on the basis of greater efficiency and competitiveness, as well as promoting national and foreign investment. As far as the relationship between subregional and hemispheric integration and the multilateral trade system is concerned, it must be acknowledged that

both of them involve more than one exception to the GATT rules if evaluated in line with the terms of Article XXIV on customs unions and free trade areas. Not only may they have effects which go beyond the (static) reallocation of resources on the basis of the criteria of creation and diversion of trade laid down in that article, but they also involve a number of economic policy instruments extending from a wide range

of non-tariff barriers to regulations on services and foreign investment.

Although some subregional arrangements on subsidies, countervailing duties, antidumping practices, safeguard clauses and rules on origin may serve as negotiating instruments within the inter-American and multilateral trade negotiations, an effort should be made to ensure that the corresponding agreements are not excessively restrictive, since if that were so they would constitute favourable precedents for the use of such instruments as protectionist measures at the international level, as well as having a negative effect on efficiency. The establishment of precedents with regard to services, foreign investment and reciprocity may be of particular importance, without necessarily having protectionist implications.

On the other hand, it would be useful to promote the reciprocal strengthening of subregional integration actions and negotiations at the hemispheric or multilateral level, with a view to ensuring the achievement of arrangements that could later become non-discriminatory agreements at the international level. This would depend on the particular issue involved, however, since there may be greater affinity between subregional integration and hemispheric integration in some cases (recognition of unilateral liberalization as a credit factor in favour of the countries of the region in their negotiations, and liberalization of the trade in agricultural products, for example), whereas there may be more affinity between subregional integration and the multilateral trade negotiations in others (countervailing duties).

With regard to the contribution of subregional integration to competitiveness, there is an obvious need for the existence of a certain degree of prior macroeconomic stability. Once this has been achieved, it would be possible to progress towards the establishment of competitive subregional markets through the liberalization of intra-regional

trade, the elimination of non-tariff barriers, and the establishment of standards in keeping with a demanding market. In order to reduce the costs due to trade diversion, it would be worth carrying on negotiations with such areas as Japan and the European Community in order that they, like the United States, should give due recognition to the process of unilateral liberalization which has already been carried out in Latin America and the Caribbean.

The standardization of certain environmental regulations could help to establish demanding subregional markets which would facilitate intensive intra-regional trade in environmental goods and services, thus creating a base for future exports to the rest of the world. Likewise, common legislation on foreign investment and intellectual property, together with arrangements on the provision of services which facilitate the mobility of skilled labour, could favour the development of competitiveness. This could also be promoted through institutional arrangements of a subregional nature which, on the basis of sectoral or geographical criteria and the stimulus of competitive and demanding subregional markets, could promote the establishment of stable vertical and horizontal relations among enterprises and bodies of importance in the generation and dissemination of technology in the region, in order to further the generation and appropriation of technological externalities. In line with this, it would be desirable to endow the subregional economic integration bodies with the necessary capacity for promoting agreements among the various enterprises and bodies, while at the same time strengthening their capacity to manage or promote the coordination of subregional technological development action. This could also be combined with the strengthening of their technical capacity in the area of the international trade negotiations and the adaptation of their governmental forums to the new tasks.

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The Latin American labour market, 1950-1990

*Ricardo Infante**
Emilio Klein

This article contrasts the behaviour of the labour market in the region between 1950 and 1980 with that registered after the onset of the crisis of the 1980s.

The first part of the article analyses various elements of change and continuity in employment, including such variables as the growth of the population in general and of the economically active population; the sectoral distribution of employment; the social mobility of labour, and trends in the under-utilization of labour. Employment in the traditional sectors in the region behaved differently from what was observed in the industrialized countries, and the same was true of the informal sector. At the same time, the share of wages in the gross domestic product showed a strong element of continuity.

The crisis of the early 1980s, with the consequent adjustment processes, changed some basic characteristics of the labour market: it increased the structural heterogeneity and changed the trends both in the under-utilization of labour and in its shift towards an increasingly precarious basis. Medium-sized and large private sector enterprises lost part of their capacity to absorb labour, and small-scale enterprises and the informal sector came to be the most dynamic elements in the generation of jobs. The labour absorption capacity of the public sector, for its part, was halted or reduced. Agricultural employment registered a relative decline, although the indicators in the modern and peasant sectors maintained great stability, albeit with an increase in the temporary nature of the jobs involved. The wage levels prevailing towards the end of the 1980s were generally lower than those before the crisis.

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Introduction

This article analyses the behaviour of the labour market in Latin America over the 40 years between 1950 and 1990. It is divided into two sections: part I analyses the structural trends in employment between 1950 and 1980, and this diagnosis serves as the framework for part II, which describes the impact of the crisis on the labour market during the 1980s.

I

Structural background, 1950-1980

This section indicates the processes of change which have altered the nature of employment over this period and the elements of continuity which have remained relatively constant in the labour market.

The first change concerns the volume and nature of the labour supply, and the point which should be noted in this respect is the heavy population growth and the variations in the rates of participation. The highest population growth rate was in the five-year period 1960-1965, when it came to an annual average of 2.9%: this was subsequently reflected in rapid growth of the population of working age, which reached its peak growth rate, of similar magnitude, in the 1970s. At the same time, there was an increase in the participation of women in the labour force, with faster growth between 1970 and 1980. In the 1970s, the annual growth rate of the female labour force was 4.7%, while that of the male labour force was 2.8%.¹ This increase was due largely to the higher rate of participation of young women, which increased significantly for the 20-24 age group. In contrast, the rate for young men went down, particularly for the 15-19 age group, which explains the relative stability of overall participation for men.

As a result of the foregoing, the economically active population (EAP) grew rapidly over the three decades between 1950 and 1980, in spite of general

¹At the regional level, the incorporation of women into the labour force grew fastest in the 1970s. In countries such as Argentina, Colombia and Panama, however, this phenomenon took place in the 1960s, whereas in other countries such as Bolivia, Guatemala, Honduras and Nicaragua it took place in the 1980s or is expected to take place in the 1990s (IDB, 1987; CELADE, 1985).

declines in participation in the first two decades of this period. Thus, in 1980 the EAP for the region came to 119 million persons (CELADE, 1990). Its highest growth rate was observed in the 1970s, when the increase in participation combined with growth of the working-age population to give an annual growth rate of 3.2% in the labour supply. This growth was very different for rural and urban areas, however, because of the heavy migration flows. In 1950, Latin America was a rural and agricultural continent whose inhabitants were mostly peasants and farm workers. Thirty years later, however, in 1980, the average Latin American lived in enormous urban agglomerations. This process of migration from the rural sector to the cities, which was undoubtedly one of the most important economic and social phenomena in the second half of the 20th century, brought with it profound changes in the structure of employment.

Thus, whereas in 1950 55% of the population worked in agriculture, in 1980 only 32% did so (table 1). While the share of agriculture in total employment went down, that of industry and services increased considerably. The increase was particularly great in the services sector, whose share grew by 16 percentage points, whereas that of industry rose by seven percentage points (Wells, 1987). This change in the employment structure has meant, *inter alia*, a massive transfer of labour to activities of greater productivity and possibly higher income. Thus, the change in employment from the agricultural sector to other sectors played an important part in reducing the extent of rural poverty (ECLAC, 1985 and 1990b; Altimir, 1979).

Table 1
LATIN AMERICA: STRUCTURE OF ECONOMICALLY
ACTIVE POPULATION, BY SECTORS OF
ECONOMIC ACTIVITY, 1950-1990
(Percentages)

	1950	1980	1990
Agriculture	55	32	26
Industry ^a	19	26	26
Services ^b	26	42	48
Total	100	100	100

Source: PREALC(1982) and ECLAC(1990a). For 1990, the data used came from PREALC estimates based on the information contained in the household surveys for Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica and Venezuela, which cover 60% of the economically active population of the region.

^a Includes mining, manufacturing, construction and electricity.

^b Includes commerce, transport and services.

A third very important change in the labour market was the change in the occupational structure due to the shift towards the tertiary sector already mentioned, which was reflected in turn in generalized social mobility of labour. Thus, as the occupations of lowest productivity went down, there was also a reduction in the lowest social strata (agricultural wage earners, manual workers and peasants), there was slow growth in the strata made up of manual workers as a whole, but there was rapid growth in non-manual occupations with higher skills and incomes (ECLAC, 1989b). In this latter process, the growing incorporation of women and young people into the labour market played a significant role, since these persons mostly occupied non-manual urban jobs, especially in services, where the employment of women grew by 4.7% per year.

In this context of mobility due to changes in the occupational structure, special mention must be made of the generation of public employment. With the evolution in the agricultural economy and the consequent process of urbanization, the State had to increase government employment in order to face the new challenges in the public sector, including the execution of new infrastructural works, the provision of social services, and even the modernization of the State apparatus itself. Consequently, the growth in employment was not just a result of these processes but also a necessary antecedent for bringing them about. At the same time, this type of employment helped to create a Latin American middle class (table 2). Around the 1980s, public employment accounted for 15% of total urban employment and 20% of formal urban employment, and in some countries 60% of professionals worked in the public sector.² (Echeverría, 1985).

The fourth change which should be emphasized concerns the under-utilization of labour, which naturally underwent changes as a result of the

²These figures refer to Argentina, Bolivia, Colombia, Costa Rica, Panama, Peru, Uruguay and Venezuela and include central, provincial and municipal government, public administration, defence, quasi-autonomous public institutions and public enterprises.

Table 2
LATIN AMERICA: ESTIMATED TRENDS IN STRUCTURE OF EMPLOYMENT, 1950-1989
(Percentages)

Latin America	Structure						Annual growth rates	
	1950		1980		1989		1950-1980	1980-1989
Total population							2.7	2.2
Working-age population							2.8	2.6
Total EAP	100		100		100		2.5	2.8
Non-agricultural EAP	45		68		74		3.8	3.7
Non-agricultural employment	42	100	63	100	70	100	3.9	3.9
Formal sector	32	76	47	75	48	69	3.9	3.0
Public	6	(14)	10	(16)	10	(15)	4.5	3.7
Private	26	(62)	37	(59)	38	(54)	3.7	2.9
Informal sector	10	24	16	25	22	31	3.9	6.7
Non-agricultural unemployment	3		5		4			
Agricultural EAP	55		32		26		0.7	0.7
Agricultural employment	54	100	31	100	25	100	0.7	0.6
Modern sector	22	41	13	42	10	40	0.8	0.5
Peasant sector	32	59	18	58	15	60	0.7	0.6
Agricultural unemployment	1		1		1			
Indicators of under-utilization								
Total rate of unemployment	4		6		5			
Urban	7		7		5			
Rural	2		2		3			
Total rate of underemployment (traditional sectors/EAP)	42		34		37			

Source: Estimates prepared by the Regional Employment Programme for Latin America and the Caribbean (PREALC), on the basis of national censuses and household surveys, and ECLAC (1978). For 1980 and 1989, the data correspond to Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Venezuela, which account for 80% of the total economically active population (EAP) of the region.

Note: For purposes of comparison, it may be noted that during the period in question the annual growth rates of some major economic indicators were as follows (ECLAC, 1990a):

	1950-1980	1980-1989
Total GDP	5.5	1.2
Agricultural GDP	3.5	2.1
Non-agricultural GDP	5.8	1.1
Industrial GDP	6.2	0.5
Per capita GDP	2.7	-1.0
Per capita GDP	2.7	-1.0

above processes. Between 1950 and 1980 the percentage of under-utilization (underemployment plus unemployment) went down from 46% to 40%: that is to say by 13%.³ Since the EAP slightly more than doubled over this period, however, in absolute terms the number of under-utilized employed persons rose from 27 million to 49 million.

³This percentage was measured using occupational category as the criterion for defining underemployment, which means that it only partially reflects the real extent of the latter.

There is a very close relation between the status of persons in the labour market and the poverty of their households, so that the latter should display a similar downward trend in relative terms, and indeed, in 1960 (the year for which a first estimate exists) 50% of the households were poor, while in 1980 the figure had gone down to 35% (table 3). Nevertheless, however, due partly to the increase in the population, the number of poor increased from 112 million to 136 million between those years, and they were increasingly concentrated in urban areas. Thus, already by about 1980 half of them lived in the cities.

Table 3
LATIN AMERICA: EVOLUTION OF POVERTY, 1960-1989
 (Percentage of households)

	Total		Urban		Rural	
	Poverty	Indigence	Poverty	Indigence	Poverty	Indigence
1960	50	...	...	...	...	...
1970	40	19	26	10	62	34
1980	35	15	25	9	54	28
1986	37	17	30	11	53	30
1989	37	17	31	12	54	31

Source: 1960-1970: ECLAC (1985) and Altimir (1979); 1980-1989: ECLAC (1990b).

In spite of the major changes which took place in the labour market, it maintained one feature which did not vary: the persistence of the traditional sectors. Thus, unlike what happened in the countries which are now industrialized, whose modern sectors rapidly absorbed the labour previously employed in low-productivity activities, in the region this process has been not only slower but structurally different.

Although the greater part of the population has become concentrated in the urban sector, the internal structure of employment in the various sectors has not significantly changed. It may be seen from table 2 that the traditional rural sector and the informal urban sector have maintained shares which are practically equal as a proportion of the respective populations. Thus, the peasant sector covers more or less 60% of those employed in agriculture, while the informal sector covers about 25% of those employed in urban areas: magnitudes which have remained constant for 30 years. This structural heterogeneity, which characterizes the economic development process in Latin America and reflects the co-existence of forms of production with different levels of productivity, gives rise *inter alia* to the segmentation of the labour market into a modern high-productivity stratum and a traditional low-productivity stratum.

Furthermore, growing economic and social differences are to be observed within the traditional sectors, against a background of persistent structural heterogeneity. Although more empirical data are available regarding the peasant sector and there has been a more exhaustive theoretical discussion than that concerning the informal sector, it may be stated that processes of differentiation of labour

have taken place within each one of these segments. Thus, in the peasant sector a group of small producers has managed somehow to latch on to the process of agricultural modernization and is enjoying its benefits, above all in terms of greater income through increased productivity. Other groups, however, have remained on the sidelines and have not managed to overcome the poverty barrier. In this process of differentiation, a very important role was played by the agrarian reform and colonization policies applied in various countries of the region, which formed part of the overall set of policies aimed at modernizing agriculture. These modernization policies, which did not reach all sectors and excluded certain groups for various kinds of reasons, succeeded in improving the levels of productivity and income of the groups at which they were directed, thus increasing the distance between them and other groups which were not incorporated into these programmes.

A similar phenomenon is to be observed in the informal sector. Although initially, and above all at the conceptual level, belonging to the informal sector was closely identified with poverty, the process of internal differentiation already referred to has taken place in this sector too. Already in the 1970s PREALC was talking of areas within the informal sector which had growth potential and was drawing a distinction between them and others which really were marginal and non-viable occupations to which it was not possible to apply policies aimed at increasing productivity (PREALC, 1975). In addition, an analysis was made at the level of branches of activity in order to identify sectors of production where this potential was most markedly present: for example, repair services, food, footwear, wood

products, some subsectors of commerce, etc. (PREALC/STPS, 1976). To sum up, what we are saying is that even in the traditional sectors a process of differentiation is taking place, and one of its effects is the generation of a social group with higher income levels and good development prospects in the economic field. It is very likely that this process began in the agricultural sector before the informal one, because the modernization policies were applied earlier there, and it is argued that these policies help to heighten social differentiation.

A second element of continuity is the share of the remuneration of wage earners in the gross domestic product of most of the countries. Thus, between 1960 and 1980 this share remained relatively constant at around 35%.⁴ Although the proportion of wage-earners increased, wages grew in direct proportion to productivity.⁵ No precise information

is available on the evolution of informal sector incomes, but estimates based on the one hand on the hypothesis of a constant share of the urban informal sector in the gross domestic product and, on the other, on the existence of a link between the growth of demand in the wage-earning sector and the income of the urban informal sector suggest that there was an increase in the average real wages in the latter sector over the decades in question. The reduction in urban poverty is another proof of this increase in informal sector incomes.

Finally, it may be noted that the level of open unemployment was low and also remained stable within the overall under-utilization of labour. Estimates by PREALC (1981) show that the rate of unemployment remained at around 5% of the EAP, which means that this form of under-utilization only accounted for about a quarter of the total under-utilization of the labour force.

II

Changes in the labour market in the 1980s

As we shall see in this section, some of the aspects related with the labour market in the 1980s had their origin in the processes described in the previous section. Particularly important among them, *inter alia*, were the opposing trends in the participation of women and youths in the labour market and the growth in urban employment, particular in the services sector.

However, the beginning of this decade was marked in the industrialized countries by a significant slackening in their economic growth and a generalized process of structural adjustment. In the Latin American region, the crisis situation was even more severe, leading to

serious deterioration in production conditions and in the labour situation, with a consequent process of adjustment.⁶

As a result of this adjustment process, the labour market in the region underwent changes which decisively affected its functioning compared with that of the previous 30 years. In global terms, there was a change in the basic characteristics of the functioning of the labour market: structural heterogeneity increased, and there was a change in the trends regarding both the under-utilization of labour and the shift towards more precarious forms of work. This section will analyse the general trends for Latin America, while fully recognizing that there are differences between the individual countries and that these became even more marked in the second half of the 1980s (table 4).

⁴This figure was estimated from the national accounts data of the countries of the region (ECLAC, 1989a). This means that between 1950 and 1980 average real wages increased at the same rate as the product per person employed in the modern sector. Over this period, that product grew by 5.5% per year, while employment in the modern sector increased at the rate of 3.9% per year (table 2). Consequently, the product per person employed grew by 1.6% per year.

⁵The percentage of wage earners among the economically active population, or the sum of the urban and rural formal sectors, rose from 54% to 60% between 1950 and 1980 (table 2).

⁶For more details on the subject of the restructuring of the world and Latin American economies see, *inter alia*, OECD (1985 and 1989); Fallon and Riveros (1989); ILO (1985, 1987 and 1989); PREALC (1990b), and Bianchi, Devlin and Ramos (1987).

Table 4
SELECTED LATIN AMERICAN COUNTRIES: LABOUR MARKET
GROWTH RATES AND TRENDS, 1985-1989
(Percentages)

	Annual growth rate 1985-1989			Rate of urban unemployment		Percentage of informal employment in urban EAP ^a	
	GDP	Real wages		1985	1989	1985	1989
		Industry	Minimum				
Argentina	0.1	-7.7	-11.8	6.1	7.8	27.6	28.7
Bolivia	1.4	...	...	5.8	7.01	25.0	27.0
Brazil	3.6	2.4	-4.9	5.3	3.3	28.7	28.6
Colombia	4.9	1.0	0.3	14.0	9.6	28.4	27.3
Costa Rica	4.6	-0.7	-0.4	6.7	3.8	21.3	22.0
Chile	6.8	6.8	2.0	17.0	7.2	26.2	30.0
Jamaica	4.1	...	...	25.0	18.0	23.0	25.0
Mexico	0.5	-0.3	-8.3	4.4	2.9	28.1	34.8
Paraguay	4.2	...	8.2	5.1	6.1	36.4	35.6
Peru	-1.0	-14.5	-19.1	10.1	7.9	35.0	39.0
Trinidad and Tobago	-3.4	...	...	15.0	21.0	23.0	19.0
Uruguay	3.9	4.7	-4.4	13.1	8.6	19.0	19.0
Venezuela	3.3	0.5	-5.2	14.3	9.7	22.5	23.3

Source: PREALC estimates, based on household surveys of the countries, and ECLAC (1991). In the case of Jamaica and Trinidad and Tobago, the employment data come from Witter and Anderson (1991) and de Pantin (1991).

^a Informal employment includes own-account workers, family helpers, and domestic service.

1. Changes in the nature of the employment problem⁷

Firstly, the share of the informal sector in urban employment increased from 25% (its traditional level in the past) to 31%, while the share of the peasant sector in agricultural employment rose from 58% in 1980 to 60% towards the end of the decade (table 2).

This change in the composition of employment, involving an increase in the share of activities of lower productivity, together with the fact that open unemployment (although it grew during the crisis) remained relatively constant between 1980 and 1989, meant that total under-utilization of the labour force (underemployment plus unemployment) increased from 40% to 42% during the decade. This represented a reversal of the historical downward trend registered by under-utilization of labour between 1950 and 1980.

Furthermore, during the period of adjustment there was a change in the structure of the under-

utilization of the labour force: the importance of underemployment increased, but that of unemployment remained relatively constant (table 2). What is more, urban underemployment and unemployment became responsible for the major part (70%) of the overall employment problem of the region.⁸

In addition to these trends, there was an intensification of the shift towards more precarious forms of work in such respects as lower labour stability, replacement of full-time employment by part-time work, and increasing use of subcontracting, which are the main features of the current functioning of the labour market (Wurgalt, 1988).

These changes in the labour market were the result, as we shall see below, of the dynamics of the labour supply, the restructuring of urban employment and the behaviour of rural employment.⁹

⁸ Equals the proportion of the sum of urban underemployment (22%) and unemployment (4%) in total underemployment (37%). (See table 2).

⁹ It should be noted that the trends of the main labour market variables for the years 1980-1989 are the result of provisional estimates made on the basis of data from the household surveys of the countries. For the 1950-1980 period, in contrast, the data were prepared on the basis of population censuses. Consequently, the trends displayed by the two types of figures for the periods in question should be analysed with caution.

⁷ This subsection reflects the main conclusions of the analyses made by PREALC on the changes in the labour market during the decade (see in this respect PREALC, 1983, 1985, 1987, 1988a and 1988b).

a) *Labour supply trends*

In the 1980s, the demographic effects of the decline in the growth rate of the working-age population which had begun in the 1970s began to make themselves felt in the labour market. The growth rate of the economically active population slackened significantly, despite the increase recorded in rates of participation: thus, on average it grew by 2.7% per year, which is significantly less than the rate of 3.1% registered for the 1970s. Towards the end of the 1980s, the EAP consisted of 157 million persons (CELADE, 1990).

One of the elements which determined the evolution of the labour supply in the 1980s was undoubtedly the increase in the participation of women in the labour market, which, as already noted, had made a significant start in previous decades. The household surveys of a number of countries¹⁰ reveal a constant increase in rates of female participation. Likewise, since the male rates did not show any appreciable change, there was also an increase in the proportion of women in the labour force. Thus, the rate of participation by women increased by almost one-fifth during the decade, from 32% to 38%, and consequently, the contribution by women to the increase in the economically active population over that period was 42%.

Another factor which affected the evolution of the EAP during the period was the dynamics shown by the young section of the population, which continued the trends of the previous two decades. The participation rates of the 15-19 group continued to go down, while those of the 20-24 group continued to increase because of the higher participation by women, which made up for the decline in male participation rates. The slackening in the growth rate of the younger section of the population continued to follow the pattern begun in the previous decade, which, since its rate of participation remained more or less constant, meant that the relative pressure of this age group on the labour market went down during the decade.

Finally, it is also necessary to take into account the relevant factors of the trends and location of the labour supply. The non-agricultural EAP continued to grow at the high annual rate of 3.7%,

while the agricultural EAP maintained its historical trend towards lower growth rates, with an increase of 0.7% per year in the decade (table 2). These trends in the evolution of the labour force meant that at the end of the 1980s 74% of the total EAP corresponded to non-agricultural activities and 26% to the agricultural sector.

b) *Restructuring of urban employment*

Although in the 1980s the region was under less population pressure than in the previous decade, the sharp contraction in economic growth slowed down the creation of jobs in the modern sector, whose feeble expansion was markedly below the growth rate of the labour supply. Because of this, at the beginning of the crisis unemployment rose to levels almost twice as high as the historical rate of open unemployment, and such jobs as were generated were almost entirely in the sectors of lower productivity, thus reversing the downward trend registered in the previous three decades in the underutilization of the labour force.

Although this type of adjustment was observed in most of the countries, the restructuring of employment was less marked in those which set about processes of structural change during the decade (Chile, Costa Rica and Colombia). In these countries, the reduction in the proportion of the urban EAP engaged in modern employment was less than in the others, and there was also a less rapid increase in low-productivity employment (in small urban enterprises, for example).

i) *Loss of dynamism of modern urban employment.* Within the general scheme of the adjustment policies, an important role was assigned to the labour market in the process of transferring labour from the sector producing goods not tradeable on the international market to the sectors producing tradeable and exportable goods. In this context, the modern labour market was called upon to play a central role by reallocating employment and lowering real wages in order to bring them into line with the new situation of openness to the exterior.

The severe recession generated by the external debt crisis caused the level of economic activity of the non-agricultural sectors to drop by 1.4% per year during the period 1980-1983 (table 5). The response of modern employment to this drop in the product was not uniform, however. On the one hand, employment in medium-sized and large private sector enter-

¹⁰The countries in question are Brazil, Chile, Colombia, Costa Rica, Mexico, Uruguay and Venezuela, which account for approximately 71% of the population of the region.

prises reacted very flexibly,¹¹ going down by 2.1% per year between 1980 and 1983. This, combined with the deterioration in real wages, enabled the entrepreneurial sector to largely offset the higher financial costs deriving from the increased interest rates. In this period of recession, public sector employment policy was of a markedly anticyclical nature, reflected in the expansion of the demand for government staff and/or the implementation of emergency employment programmes. Thus, between 1980 and 1983 government employment expanded at the rate of 4.3% per year, which meant that during the crisis the public sector maintained the government employment policies which it had been applying in the past.

After these years of recession, the region experienced a period of recovery (1983-1986) in which the non-agricultural gross domestic product grew by 3.8% per year, followed by another period of relative stagnation (1986-1989), when that product grew by only 1.1% per year. In both periods,

modern employment in medium-sized and large enterprises reacted with a high degree of elasticity with respect to the product: it rose by 3.2% per year in the recovery phase, and by 0.9% in the stagnation phase (table 5). The public sector, for its part, accentuated its compensatory policy during the period 1983-1986, when government employment grew at the rate of 4.8% per year. Towards the end of the decade, however, the need to reduce the public deficit, together with the application of reforms in the State apparatus, led to a substantial reduction in the State's capacity to absorb labour.¹²

In short, the 1980s witnessed a significant decline in the rate of creation of jobs in medium-sized and large enterprises of the modern private sector, together with a trend towards increasingly precarious employment status. The growth rate of the product was only 1.2% per year, and employment in the modern sector grew by only 0.5% per

Table 5
LATIN AMERICA: ESTIMATED TRENDS IN URBAN EMPLOYMENT STRUCTURE, 1980-1989
(Percentages)

Urban areas	Structure				Annual growth rate				Index 1989 (1980=100)
	1980	1983	1986	1989	1980- 1983	1983- 1986	1986- 1989	1980- 1989	
Population	-	-	-	-	2.2	2.2	2.1	2.2	121.6
Working-age-population	-	-	-	-	3.6	3.6	3.4	3.5	136.3
EAP	100.0	100.0	100.0	100.0	4.1	3.7	3.4	3.7	139.1
Employment	93.0	91.0	93.0	95.0	3.3	4.7	3.8	3.9	141.5
Public sector	15.0	15.0	15.0	14.0	4.3	4.8	2.0	3.7	138.4
Formal private sector	55.0	50.0	50.0	51.0	1.1	4.1	3.4	2.9	128.8
Large and medium-sized enterprises	40.0	33.0	32.0	30.0	-2.1	3.2	0.9	0.5	104.9
Small enterprises ^a		15.0	17.0	18.0	21.0	8.6	6.4	7.5	191.6
Informal sector	24.0	26.0	28.0	30.0	7.1	6.3	6.6	6.7	172.4
Unemployment	7.0	9.0	7.0	5.0	14.4	-7.7	-3.0	0.8	107.5

Source: PREALC estimates on the basis of household surveys. Provisional figures. The data correspond to Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Venezuela, which account for 80% of the total EAP of the region.

^a Enterprises employing up to ten workers.

Note: According to estimates based on ECLAC (1990a), the evolution of GDP and GNP in the region over these periods was as follows:

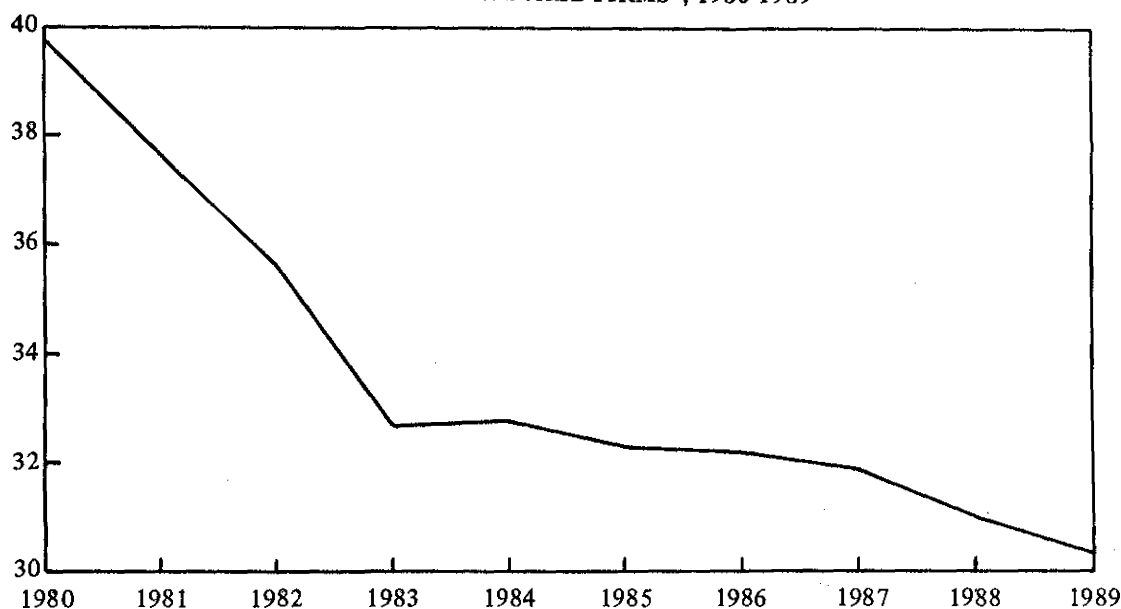
	Annual growth rate				1989 index (1980=100)
	1980-1983	1983-1986	1986-1989	1980-1989	
GDP	-1.3	3.6	1.5	1.2	111.7
Agricultural GDP	1.7	1.8	2.7	2.1	120.6
Non-agricultural GDP	-1.4	3.8	1.1	1.1	110.0
Industrial GDP	-3.8	4.6	0.6	0.5	102.9
Per capita GDP	-3.5	1.4	-0.7	-1.0	91.7

¹¹ Aspects related with employment flexibility include labour stability, which tended to go down during the crisis (Wurgajt, 1988).

¹² Thus, between 1986 and 1989 the annual growth rate of government employment was only 2% (table 4).

Figure 1

**LATIN AMERICA AND THE CARIBBEAN: PERCENTAGES OF NON-AGRICULTURAL
ECONOMICALLY ACTIVE POPULATION EMPLOYED IN MEDIUM-
AND LARGE-SCALE FIRMS^a, 1980-1989**



Source: Table 5.

^aCorresponds to private sector firms with over 10 employees.

year, while that sector's absorption of the non-agricultural EAP went down from 40% in 1980 to 30% in 1989 (figure 1). The public sector, for its part, also showed a slight tendency to absorb a smaller percentage of the non-agricultural labour force, with the respective figure going down from 15% in 1980 to 14% in 1989 (table 5). Thus, as a result of the external crisis and the adjustment policies applied, the proportion of the non-agricultural labour force of the region employed in strictly modern activities¹³ went down from 55% at the beginning of the 1980s to 44% at the end of the decade.

ii) *The high growth rate of urban employment in lower-productivity sectors.* In view of the sluggishness of the modern sector, the expansion of employment in lower-productivity activities was a decisive element in the restructuring of the labour market. Both the expansion of employment in small enterprises and the significant increase in the informal sector helped to prevent an increase in open unemployment.

During the crisis years, there was a high rate of increase of employment in small enterprises, reach-

ing annual growth rates of 8.6%, or a cumulative figure of 28% between 1980 and 1983 (table 5).¹⁴ This high growth rate was maintained, albeit at a slightly lower level, during the periods of recovery (1983-1986) and relative stagnation (1986-1989), so that over the decade as a whole employment in small enterprises increased at an average annual rate of 7.5%.

For the region as a whole, this behaviour of employment in small enterprises meant that their share of the total EAP increased from 15% in 1980 to 21% in 1989, with this sector generating 40% of the total jobs created in urban areas in that period.

This increase registered in employment in small enterprises should be analysed carefully, however, in view of the various factors that could be behind it. In this respect, it is argued in PREALC (1988b) that the phenomenon could be due to a process of restructuring of medium-sized and large enterprises, which reduced the number of persons employed per unit of production during the crisis. At the same time, as noted by Wurgaft (1988), the growth in employment in small enterprises may be considered as part of the general process of the spread of precarious employment which took place

¹³These correspond to employment in the public sector and in medium-sized and large enterprises in the modern sector.

¹⁴For operational purposes, small enterprises are defined as those units of production which have up to 10 employees.

over the period, for during the 1980s the medium-sized and large enterprises tended to replace the hiring of permanent or temporary labour with subcontracting arrangements with small enterprises, as one of the expedients used to get round labour legislation. Likewise, it must be borne in mind that the greater part (70%) of the sector of small enterprises is made up of micro-enterprises with up to five employees, whose informal nature is reflected in low levels of productivity and income. In the final analysis, even though small enterprises made an important contribution to the generation of employment during the crisis, this was due to very varied types of phenomena and it is therefore not possible to assign a structural nature to this new trend in employment.

The traditional urban informal sector, for its part, showed a similar type of evolution, although it had a more important effect on the adjustment of the labour market, since it was responsible for 45% of the urban jobs created during the decade.¹⁵ The majority of informal workers are in the tertiary sector (80%), with the remainder working in industry (10%) and construction (10%), at low levels of productivity and income (Pinto, 1984).

The expansion in informal employment was rapid during the crisis (7.1% per year), slackening off slightly in the subsequent phases of recovery (6.3%) and stagnation (6.6%). As a result, the average growth rate of informal employment during the decade was 6.7% per year, that is to say, 1.8 times the annual growth rate of the urban EAP. This expansion in the urban informal sector caused its incidence in the employment of urban labour (or the "degree of informality") to increase from 24% in 1980 to 30% in 1989 (table 5). All this leads to the conclusion that this process meant a transfer of labour from agriculture to the services sector, whose incidence in the EAP increased from 42% in 1980 to 48% in 1989 (table 1).

iii) *The increase in open urban unemployment and changes in its composition.* In contrast with what happened in the developed countries, the labour market in the region had been adjusting in ways which influenced the occupational structure rather than the rate of open unemployment. This underwent a significant change at the beginning of

the 1980s, affecting both the level and the composition of open unemployment.

Firstly, during the period of recession (1980-1983) the combined effects of the rise in rates of participation and the decline in modern private sector employment were not offset by the rapid increase in employment in low-productivity sectors. As a result, open unemployment reached levels close to 10% between 1983 and 1984. It may be concluded from this phenomenon that the labour market of the region, which was subjected to policies of a recessionary nature, responded with increases not only in underemployment but also in open unemployment, whose level rose in only three years by 40% over the historical average. Moreover, although open unemployment increased in an extremely sensitive manner during the crisis period, in the phase of economic expansion it tended to go down relatively slowly. Thus, starting in 1983, the rate of open unemployment took six years to return to 5%, close to the historical level.

Secondly, the decade witnessed important changes in the profile of the unemployed. On the one hand, there was a change from the historical composition of open unemployment made up of secondary workers, that is to say, young persons and women who are not heads of households. Thus, in the crisis period there was an increase in the incidence of the primary labour force in unemployment: this was reflected in disproportionately high growth of the number of unemployed who were heads of households, males and persons at the ages of greatest activity (24 to 44 years). At the same time, the increase in the number of manual workers with low levels of education among those who lost their jobs indicates that during the adjustment unemployment essentially affected unskilled workers. The absorption of open unemployment as from 1984, however, substantially reduced the proportion of the unemployed made up of heads of households who are the mainstay of family income. This was perhaps the most important change in the features of the unemployed, since the other characteristics, connected with age and sex, varied only slowly.

In spite of the changes in the composition of unemployment during the decade, the problem has continued to affect the groups which are historically most affected by this problem. Thus, the rate among women is higher than that among men, and

¹⁵This segment includes non-professional own-account workers, unpaid family members and domestic servants.

there continues to be a high rate of unemployment of workers who are not heads of households or who are young persons.

As may be seen from the above, the policies of adjustment to the external crisis led to growing under-utilization of the labour force in the urban labour market. Thus, whereas in 1980 31% of the urban labour force was employed in informal activities or was unemployed (table 5), this proportion gradually increased until it amounted to some 35% towards the end of the decade.

c) *Evolution of rural employment*

During the crisis of the 1980s, agriculture performed better than the other economic sectors: thus, between 1980 and 1989 the agricultural gross domestic product grew by 2.1% per year, while the non-agricultural product rose by only 1.1% per year over the same period.¹⁶

At the same time, the growth of 0.6% per year in agricultural employment meant that the average product per worker increased at the rate of 1.5% per year. Moreover, the agricultural sector performed satisfactorily during the crisis, since the per capita availability of food remained almost constant over the decade. Indeed, if the efficiency of agriculture during this period is evaluated in terms of the availability of calories, it will be noted that this increased from 2 673 calories per head per day in 1980 to 2 705 in 1986 (ILO, 1990).

The structure of agricultural employment favours a certain stability in the labour market. According to the estimates given in table 2, 60% of those employed in Latin American agriculture are small producers and their families, who own small areas of land used for the production of food for their own subsistence and for the domestic market. This occupational group is not subject to the conjunctural fluctuations in the demand for labour, and consequently unemployment is not a valid category for analysing their potential employment problems, as it is in the case of urban workers analysed earlier. Furthermore, the peasant sector of certain countries absorbed labour during the decade, as shown by an FAO study (FAO, 1988) which mentions that over this period the level of agricultural employment did not go down, and in fact in some countries peasant employment actually increased. García Huidobro, Hintermeister, Ponce and Pollack

(editors) (1990) mention a similar phenomenon. It is not clear, however, up to what point this labour was absorbed in a productive manner, since it must be borne in mind that the sector of small holdings is precisely that in which labour productivity is low and underemployment is common.

It may also be noted that because of the particular features of the crisis of the 1980s, and as a means of saving foreign exchange, the prices of agricultural food products for domestic consumption were relatively favourable for producers, as was observed empirically for some countries during the decade (PREALC, 1990a). It has also been observed that the terms of trade for non-exportable agricultural products (which are mostly produced by peasants) improved during the crisis at an annual average rate of 2%. This improvement in prices may have furthered the process of peasant differentiation, by favouring producers who sell on the market more than mere subsistence producers. Furthermore, an ILO study (ILO, 1990) points out that the adjustments in the real exchange rate have also been positive for agriculture, giving a suitable price framework for a corresponding response in the form of production, which has particularly favoured the group of agricultural entrepreneurs producing exportable goods.

At the same time, however, those working in agriculture are a heterogeneous group in which it is also necessary to take account of the situation of landless peasants working for wages on a permanent or temporary basis. These workers seem to have been hard hit by the effects of the crisis on the labour market, not so much in terms of the level of employment but in terms of their income. Thus, during the decade real wages in agriculture went down on average by around 20% for the region as a whole (table 6).

Although the trend towards more precarious forms of employment is not exclusively a product of the crisis, the latter does add a qualitative element which intensifies this trend in agriculture: namely, the increase in the number of temporary day workers in export agro-industry. In this type of activity, the seasonal nature of labour use is greater than in traditional agriculture, particularly during harvesting periods, so that in many countries of the region permanent agricultural employment has been going down as a proportion of total agricultural employment.

¹⁶See note in table 2.

Table 6
**LATIN AMERICA: EVOLUTION OF AVERAGE REAL WAGES AND INCOMES,
 BY BRANCHES OF ECONOMIC ACTIVITY AND SEGMENTS
 OF LABOUR MARKET, 1980-1989^a**
 (Percentages)

	Annual growth rates				1989 index (1980=100)
	1980-1983	1983-1986	1986-1989	1980-1989	
Branch of economic activity					
Agriculture ^b	-4.3	0.4	-3.3	-2.4	80.0
Manufacturing	-1.8	0.6	-0.6	-0.6	95.0
Construction	-2.1	-2.7	2.5	-0.8	93.0
Segment of labour market					
Private formal sector					
Large and medium-sized enterprises	-4.5	4.8	-2.4	-0.8	93.0
Small enterprises	-3.1	-3.4	-5.1	-3.9	70.0
Public sector	-6.4	-1.9	-3.5	-3.1	70.0
Informal sector	-10.3	-0.3	-6.5	-5.9	58.0
Minimum wages					
Urban minimum wages	-3.4	-2.0	-3.7	-3.0	76.0

Source: PREALC (1987 and 1988b) and official information supplied by the countries. Provisional figures. The data correspond to Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Venezuela, which account for 80% of the total EAP of the region.

^a Average incomes correspond to the informal sector.

^b Corresponds to the evolution of minimum agricultural wages for the majority of the countries.

In short, on the basis of the partial information available it may be posited that, within the economic context of a sector which was not so seriously affected by the crisis, neither agricultural entrepreneurs engaged in producing for the domestic or export markets nor peasant food producers were adversely affected, and in some countries conditions of employment and income even improved for them. This was not the case, however, with wage-earners, who received lower wages and also suffered from the trend towards more precarious employment. This would appear to explain the slight increase in poverty in rural areas observed during the 1980s (ECLAC, 1990b).

2. Reduction of workers' income

The external crisis and the internal adjustment policies applied to a labour market which is highly segmented in the region had negative but differentiated effects on workers' income. This was reflected in a decline in real wages in the modern sector, accompanied by a still greater fall in the

average income of those working in small enterprises and the urban informal sector. These features of the wage adjustment were repeated in almost all the countries of the region.

a) Wage adjustment

In evaluating the behaviour of real wages it is worth distinguishing between the types of adjustment they underwent in the modern private sector and in the public sector.

In the modern private sector—made up of medium-sized and large enterprises—the wage adjustment was reflected in a reduction in average wages and an increase in their intersectoral dispersion, together with an appreciable drop in the minimum wage compared with the rest of economic activities.

Firstly, during the crisis the impact of inflation on average wages in the modern sector had a serious recessionary effect on effective demand which exceeded any other microeconomic effect on production costs or the effect of reallocating labour and other resources to the tradeable goods

sectors. Thus, between 1980 and 1983 the drop in levels of activity led to a 6% drop in modern employment and a simultaneous 13% drop in real wages. As from 1983, the increase in the amount of idle capacity during the crisis, together with the slackening of external constraints, permitted a slow recovery of levels of activity, employment and real wages. The final result was that towards the end of the decade the real wages paid by medium-sized and large enterprises were still 7% below those of 1980. It should be noted that this situation corresponds to the modern private sector, which employs the most highly organized workers and was most favoured by the policy aimed at promoting the production of exportable goods.

Secondly, there was an increase in the wage dispersion between the different sectors of economic activity. Those employed in industry almost managed to recover the level of real wages they had had in 1980, but workers in other sectors suffered a significantly greater and non-uniform fall in their remunerations (table 6). Measurements of the disparity in variations in real wages indicate that during the crisis period (1980-1983) the sectoral dispersion of wages diminished, but it subsequently increased significantly in the phases of expansion (1984-1986) and stagnation (1986-1989). In the final analysis, during the decade the dispersion of wages was accentuated in favour of those employed in industry. Although real wages in that sector nevertheless went down by 5%, the losses registered by real wages in construction (-7%), agriculture (-20%), minimum wages (-24%) and public sector wages (-30%) led to considerable widening of the wage range between 1980 and 1989.

The greater dispersion of wages indicates that in the 1980s there was a substantial change in the structure of sectoral remunerations which had characterized the labour market in previous decades. At the same time, this widening of the wage range suggests that the remunerations in those sectors where the workers are organized (industry) tend to leave behind those of the other sectors, thus generating growing differentiation of income among workers. A similar phenomenon is not observed in agriculture because the workers are not organized and there is no institutional machinery governing participation in increases in productivity; as already noted, there were significant

increases in productivity in this sector during the decade, but agricultural wages nevertheless fell.

The third feature of the wage adjustment in the labour market during the years in question is reflected in the behaviour of minimum wages. The 24% reduction in real minimum wages during the decade reflects a significant loss of their importance as a regulatory mechanism for the incomes of less skilled workers without negotiating capacity. Likewise, the divergence between the variations in the minimum wage and the average industrial wage suggests that the evolution of the remunerations of less skilled workers differs significantly from that of the higher strata of wage-earners (managers, professionals, technicians and supervisors) and it also helps to further the process of differentiation of income among those employed in the modern sector (that is to say, there is greater intra-sectoral dispersion of wages).

In the public sector, unlike the modern private sector, wage adjustments were due rather to the anticyclical role of government employment policy: the increase in employment had to be financed by reducing wages, in order to contribute to the progressive reduction of the public deficit. Thus, in the period 1980-1989 the annual increase of 3.7% in public employment was accompanied by a drop of 3.9% per year in real remunerations (tables 5 and 6).

b) The contraction of income in the informal sector

Studies made by PREALC (1990b) for various countries of the region show that incomes for non-wage labour, which predominates in the urban informal sector, are closely linked with the evolution of the wage bill for the modern sector. Furthermore, the competitive nature of the markets in which the informal sector operates mean that the average income of those working in it adjusts in an extremely flexible manner to increases in the incomes of workers in other activities.

It is estimated that the wage bill of the modern sector, that is to say, the potential demand for informal sector products and services, did not vary between 1980 and 1989 (tables 5 and 6). Consequently, over this whole period the total income of the informal sector is estimated to have remained constant, whereas employment in it expanded by 72%. This means that the average income of informal sector workers went down by 42% in real terms: i.e., by 5.9% per year over the period.

In short, the policies of adjustment to the external crisis led to a deterioration in the labour market which was reflected in lower quality of the jobs generated, an initial increase in unemployment, and a generalized fall in remunerations. Thus, over the period 1980-1989 total employment expanded at an annual rate of 3.3%, while average labour income went down in real terms by 3.8% per year. This meant that total labour income¹⁷ went down by 0.6% per year, while the GDP rose by 1.2% per year.

4. Conclusion

The crisis of the early 1980s and the subsequent adjustment processes carried out in various countries of the region gave rise to some significant changes in the structural tendencies which had been observed in the labour market since mid century. With regard to employment, the first important change was that the private sector made up of medium-sized and large enterprises reduced its capacity to absorb urban labour, so that small enterprises and the urban informal sector came to be the

¹⁷This corresponds to the total income of all wage-earning, and non-wage earning workers as a whole.

most dynamic elements in the generation of new jobs. The second change was connected with the capacity of the public sector to absorb labour. This had been an important factor for 30 years and had made a big contribution to the creation of the Latin American middle class. During the 1980s, however, the process of generation of public employment stopped, and in a number of countries the number of persons employed in the public sector actually went down in absolute terms.

The urbanization and tertiarization of employment had as their counterpart a relative decline in agricultural employment, but in contrast with what happened in the urban sector, there was extraordinary stability of the modern and peasant segments through the period under consideration. The most significant change in this sector was the increase in temporary jobs, which was a direct result of the features of agricultural modernization.

All in all, the labour market reacted more flexibly with regard to wages. Thus, at the end of the decade the prevailing levels were generally lower than in 1980, which suggests that the adjustments in this respect were bigger and faster than those in employment.

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The economic and social significance of narcotics

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The production, trafficking and abuse of drugs has attained enormous magnitude all over the world. In Latin America, the problem has taken on very special implications, because that is the region where the countries which are the biggest producers of coca leaves, basic paste and cocaine are located.

The illegal nature of the narcotics industry gives it very special features: organized crime, violence and corruption are its natural components. The drug traffickers use their power to penetrate the structures of society, intervene in the decision-making systems, and control part of the national territory. They also use force, through paramilitary groups, in order to destabilize States and impose their own laws and values, violating human rights and endangering the continued existence of the democratic system.

Drugs affect the health of those who consume them, especially young people and children. The various options for combating drugs are discussed both at the level of the countries involved and at that of the region as a whole. On the international level, under the leadership of the United Nations, a policy is being worked out which is based on the principle of shared responsibility, respect for the sovereignty of States, elimination of the use of force, and non-intervention in the internal affairs of countries.

The attempt to find a solution to the drug problem through the eradication of coca plantations raises the question of whether such programmes are valid, in view of the high cost of replacing these crops with others which are much less profitable and the damage done to the ecosystem by the use of certain herbicides, burning of crops, and worms that eat the coca leaves. It is also a matter of concern that the process may take on the nature of a police operation of a repressive nature which could affect the relations between some countries, due to the danger of the "militarization" of the actions involved.

While acknowledging the relevance of such aspects, this article is devoted primarily to an analysis of the economic and social significance of the narcotics problem in Latin America and the Caribbean.¹

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¹For a more detailed analysis, see Giusti, 1991a and 1991b.

I

The economic significance

The main economic trends which affected the world in the 1980s, whose perverse combination resulted in the intensification of poverty, facilitated the boom in illicit drug trafficking in the region. Two of these tendencies were the rapid decline in the prices of unprocessed commodities such as minerals and agricultural products and the external debt accumulated by the developing countries (United Nations, 1990). This indebtedness, the drop in international prices, widespread poverty and drug trafficking are all interlinked and mutually reinforce each other. Any broad effort made to eliminate one of these problems must necessarily take account of the others.

The drug economy apes the structure of the transnational corporations and links together production, marketing and finance in an intricate network that rides roughshod over national frontiers and extends to all the continents. The clandestine, underground and parallel nature of the drug economy enormously complicates the analysis of its effects on the societies involved in the production, processing, trafficking and consumption of narcotics. It is very difficult to obtain exact figures, because the laundering of hot money from the illicit gains of this traffic is carried out through the legitimate banking system, taking advantage of the banking secrecy in force in some countries.

The enormous volume of money which enters the Latin American countries through the "drug industry" has an immediate and direct impact on their economic and financial structures. It is essential to take account of its presence in macroeconomic analysis and to incorporate the figures for the parallel economy in the official statistics, even though only approximate figures which do not reflect the real magnitude of the phenomenon may be available (Hardinghaus, 1989).

With regard to the three countries most deeply involved in this industry, there is general agreement that the disappearance of the drug industry would have negative effects for Peru and Bolivia. With regard to Colombia, opinions are divided: on the one hand, it is felt that the traffic in narcotics plays a crucial role in keeping the macroeconomic relations in balance (Kalmanovitz, 1990), while on the other hand it is asserted that the magnitude of

the phenomenon is not really so great and that the net income from it is relatively small as a proportion of GDP, while the flows of foreign exchange which effectively affect aggregate demand are still smaller (Gómez, 1990).

According to the highest estimates, the annual profits of the Colombian cocaine industry are calculated at US\$6 billion, of which half is believed to return to Colombia (Delpirou, 1988). Other estimates put the profits at between US\$4 billion and US\$6 billion per year, with US\$2 billion to US\$3 billion returning to the country (Bagley, 1988), or as little as US\$1.5 billion, with a return to Colombia of US\$750 000. A study by the University of Antioquia estimates that the entry of narco-dollars through the Banco de la República in 1987 was between US\$600 and US\$800 million (Arango Jaramillo, 1988). The lowest estimate, according to the available data, is US\$500 million (Campodónico, 1989, and Lora and Ocampo, 1987). If the figure was not less than US\$1 billion, then these profits would represent 18% of the total value of the country's legal exports in 1987 (US\$5.7 billion). The income of the Medellín Cartel alone from its exports of cocaine is calculated at US\$4 to US\$5 billion per year. In 1988, this income was higher than that from Colombia's exports of coffee, which totalled US\$1 620 million, and it almost equalled the total legal exports of the country, which came to some US\$5 340 million. In the case of Colombia, the injection of liquidity amounts to some US\$6.5 billion if a multiplier of 3.8 (slightly below that calculated for Peru and Bolivia) is used (Hardinghaus, 1989). If a multiplier of 4 to 5 is used, then it is calculated that the inflow of as little as US\$600 million will mobilize US\$2.4 billion to US\$3 billion of additional funds, in both the Bolivian and the Peruvian economy.

In Bolivia, exports of cocaine hydrochloride and coca paste amounted to over 175 000 kilogrammes in 1985, with a value on the United States market of over US\$5 470 million in that year, US\$6.9 billion in 1986 and some US\$7 billion in 1987. The gross income of the Bolivian traffickers is estimated at some US\$1.3 billion, which is a very significant amount when it is considered that the value of the legal exports of the country only came to US\$500 million in 1986. In that year, the value of Bolivia's most important legitimate export

product, natural gas, came to only US\$345 million (Hardinghaus, 1989). The hot money which returned to Bolivia in 1987 is estimated at some US\$600 million, whereas the value of legal exports in the same year was only US\$470 million. As an expert on the subject explains, "the fact that it was possible to carry out the austerity policy was due largely to the inflow of dollars from narcotics trafficking. Indeed, the new economic policy (NEP) authorized the issue of certificates of deposit payable to bearer in dollars and the opening of special accounts in dollars, precisely with the aim of recycling the narco-dollars" (Torres, 1989).

In Peru, exports of coca generate income of some US\$800 million, which is almost twice what the country receives for its legitimate exports of copper (US\$482 million in 1986). In 1987, the total value of Peru's legal exports came to US\$2 605 million (Hardinghaus, 1989). In Venezuela, according to reports by the government of that country, the economic impact of drugs was US\$2 billion, equal to 20% of the country's oil exports and one-third of the national budget. The same government indicates that drug trafficking in Venezuela has grown considerably faster in recent years because drug production and trafficking have been diverted from Colombia to Venezuela on account of the increased repressive measures applied in the former country and the liberal monetary and financial regime in effect in the latter (OAS/CICAD, 1988).

The return of the illicit funds produced by drug trafficking distorts the economy of the countries involved, since it encourages the creation of foreign exchange black markets, smuggling and price inflation in particular sectors. With the drop in the informal dollar, its value is now several points below that of the legal exchange certificates. Because of its size and its clandestine nature, the drug economy is always inflationary and tends to generate or aggravate pressures in this direction (Hardinghaus, 1989). Its influence is also felt on national saving and investment: in addition to making the necessary reinvestments for the maintenance of the narco-economy itself (in crops, laboratories, means of transport, etc.), the cartels also invest in insurance, real estate and other areas. The inflow of illicit money also has a direct and indirect influence on the gross domestic product: directly, through the exchange of drugs for money,

and indirectly, through the business and economic processes generated and through its influence (positive or negative) on the macroeconomy. In this respect, it is asserted that a phenomenon which is even more difficult to measure than the direct or indirect effects is the "global stimulating effect" that a flourishing sector (the drug industry) exerts in its general economic environment. The influence of the drug economy on the national product is greater in the poor countries that produce drugs than in the developed nations which consume them (Hardinghaus, 1989).

Finally, in this global analysis of the economic significance of narcotics it is necessary to highlight their relations with external indebtedness. In 1990, the total external debt of Latin America and the Caribbean came to US\$420 billion: more than any other region in the world. According to various estimates quoted by the United Nations, the United States market for illicit drugs is between US\$50 and US\$100 billion per year. The increasing external indebtedness and the lower income from exports led to imbalances in national budgets which gave rise to generalized extreme poverty in the countries of the region. At the same time, because of the reduction in public expenditure recommended by the international lending organizations, restrictions were imposed on the resources for combating drug trafficking, for services connected with the drug problem, and for programmes for the replacement of illegal plantations with other crops. This critical situation was compounded by the fact that the increased use of agricultural areas for illicit crops reduced the production of some food-stuffs and made it necessary to import them, thereby further weakening the monetary reserves. At the same time, the legal economy became more dependent on the foreign exchange generated by the drug economy.

If we look in particular at the external debt accumulated by the Andean countries (Bolivia, Colombia, Ecuador, Peru and Venezuela), this amounted in 1987 to US\$78 943 million (García Pérez, 1989), which is very close to the US\$80 billion paid for cocaine by United States users in a single year.² Similarly, Latin America's annual income from drug exports may be calculated at a minimum of between US\$80 billion and US\$150

billion. In one year, Peru paid US\$757 million in interest on its external debt, which is very close to the US\$800 million it received for the production and illegal export of basic paste for cocaine. At the same time, the country has to spend US\$700 million per year on food imports (De Rementería, 1989).

A good idea of the magnitude of the drug economy is given by the fact that the estimated cost to the Bolivian economy of eradicating the entire surplus production of coca, purely in terms of the reduction in GDP and without taking into account any compensation measures, is US\$939 million, of which US\$490 million corresponds to direct loss of income and US\$449 million to indirect effects of the replacement on other sectors. In order to offset the loss of these US\$939 million, approximately US\$3.5 billion of capital would be needed, assuming a capital yield of 27% (Bolivia, Presidencia de la República, 1990). In Peru, the gross value of basic paste at the end of 1988 was equivalent to 98% of the total liquidity of banks and financial institutions and 188% of all national and foreign currency deposits; consequently, in that year the Central Bank lost control over a very significant part of the monetary supply (Asociación Peruana de Estudios e Investigación para la Paz (APEP), 1990).

As almost all sales of drugs are made for cash, the conversion of the profits into bank accounts and other easily handled assets is a big problem for traffickers. Most of the profits from illicit drug transactions are "laundered" through the banking system, which makes it difficult to identify them. The traffickers manage to induce the banks to cooperate, knowingly or unknowingly, by accepting deposits of illicit profits. These assets can be "laundered" later on by transferring them to other accounts or investing them in legitimate businesses or front organizations.

One of the biggest obstacles encountered by world efforts to halt the illicit practice of laundering narco-dollars is the banking secrecy still in effect in some countries in spite of the agreements reached within the United Nations and other international bodies to remove the confidential nature of these operations. For example, the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, signed in Vienna in 1988, calls for the withdrawal of banking secrecy

²According to figures from Johns Hopkins University.

in drug trafficking investigations, and a growing number of countries are complying with this through suitable laws. Another major step forward was taken in September 1989 by the Group of Seven, which groups together the most highly industrialized nations; this group agreed on that occasion to join forces to track down the profits obtained from illicit drug transactions which are laundered through the international banking system.

With regard to the laundering of money in the countries of the region, the study by the Peruvian Association for Peace Studies and Research (APEP) already referred to notes that although enormous ill-gotten gains connected with drugs remain in the hands of traffickers who launder the money in banks outside Latin America and the Caribbean, a very substantial part of the profits is laundered

within the countries of the region. With regard to the policy on deriving advantage from the funds arising from drug trafficking, various investigations quoted by the Peruvian Association for Peace Studies and Research coincide in stating that "there is some connivance by economic policy instruments (increased bank interest rates to promote saving, sale of external debt bonds, etc.) with the capital from drug trafficking".

Among the so-called "tax havens", mention is made of Panama, the Bahamas, Grand Cayman Island, Bermuda, and the Netherlands Antilles. Recent information indicates that traffickers are using new countries for laundering their money, taking advantage of legal mechanisms which facilitate such operations. Such abuses are causing governments to take more careful measures to avoid this kind of abuse of legal economic instruments.

II

The social significance

Over the last twenty years, the entry of the phenomenon of drug abuse into the structures of society of the countries of the region has disrupted social relations and changed styles of life and behaviour. The presence of drugs affects rural areas which have lived with the coca culture for thousands of years (such as peasant communities in Bolivia and Peru, in particular). It has also had a tremendous impact, however, in the big cities, where drug traffickers have set up a regime of terror and death, as in the big urban centres in Colombia. In other countries of the continent, the drug economy is present to a greater or lesser extent at all levels of society and in all age groups, which are all affected alike either through illicit drug trafficking networks, or as consumers, or because they are involved in the illegal laundering of narcotics through the banking systems.

Drug addiction and illicit trafficking are taking on alarming proportions, since they are increasingly affecting young people and school-age children. The depressed situation of great groups of persons in a state of indigence, to whom society does not give regular access to its goods and services, provides the "manpower" for the drug traffickers, who

involve these people in their activities and at the same time lure them into vice. Drugs began to proliferate more rapidly as from the 1970s, and there is now a greater variety of them of increasingly high quality and potency. Many drugs, however, are easily available and low priced because of their dangerous levels of impurity; bazuco and crack are examples of such narcotics which cause irreparable damage to the human organism. The cost in human lives, health costs, growing levels of criminality and loss of productivity continue to be vivid illustrations of the social significance of drug abuse. Moreover, the danger to health is further aggravated by the simultaneous consumption of more than one drug in combination with alcohol, which further complicates the difficult problems of detoxication and treatment. Another alarming aspect which has recently come to the fore is the association between the intravenous injection of drugs and the spread of AIDS.

In urban areas, the drug trade takes the form of "micro-traffic", so called because of the nature of its organization in small cells, its great mobility and its concentration by areas or neighbourhoods, covered by groups of a few persons, almost always

young people and children. The sale on the street of basic paste, reefers or bazuco, marihuana and shots of heroin attracts the innumerable unemployed from the poorest strata, who are only too ready to carry on this activity which is more profitable than other options, which in any case may not always be open to them. It is the impoverished social system with a crisis of values, ineffective systems of education, and public institutions which have lost much of their prestige and their capacity to exercise control which increases drug abuse in the cities, and in addition to constituting a means of income for the drug peddlers, this traffic becomes a psychological escape hatch for users.

The violence and criminality associated with drugs and their distribution do serious damage in neighbourhoods which are already wallowing in economic stagnation. There is less incentive to open honest neighbourhood businesses, school attendance is continually perturbed, the emergency services of the hospitals are overflowing with the victims of drug overdoses and shooting incidents, residents with steady jobs soon find reasons to move to other places, and the skills and ambitions that could be used for productive purposes are frittered away in the illusory pursuit of quick profits from drug trafficking (United Nations, 1990).

The coca-cocaine complex has undoubtedly had its greatest influence in rural areas of the Andean countries which produce coca: Bolivia, Peru, Colombia and Ecuador. Whether he likes it or not, the peasant growing coca leaves in distant Andean areas is part of a long and complex chain which ends in the streets of the countries that consume crack, with all the implications that this process may involve. In this respect, however, it is necessary to recognize the clear difference between the production and consumption of coca in Andean areas, on the one hand, which is based on cultural and natural elements and accompanied by magical and religious rituals, and the production and consumption of cocaine as a merchandise. Those who do not make this basic distinction imagine that the supply of cocaine can be controlled simply by reducing or eradicating the cultivation of coca leaves, ignoring the cultural aspects associated with coca in the Andean countries (Mirtenebaum, 1989).

The disruption of cultural values which are thousands of years old and of the basic structure of

society, together with the incorporation of peasants into a monetary economy, is accompanied by a radical change in the structure of production, with a strong tendency towards the cultivation of coca plants as the main crop, and a consequent shortage of foodstuffs.

The Valley of Alto Huallaga, in Peru, which is the region where there is the greatest production of coca in the entire world, is a typical example of the situation affecting areas involved in coca cultivation, and their incorporation into the illicit drug economy, with all its corrupting effects. This type of economic growth is anarchic and has no long-term future, but it will indeed leave indelible traces on the society which is suffering its impact. The villages in the valley have branches of banks, sophisticated communications services (fax, video, computers) and places of recreation (discotheques), as well as firms selling electrical appliances and automobiles. The villagers have gained access to the comforts of modern life, but their lifestyle is now at variance with their traditional cultural values, and it involves drug addiction and participation in the criminal structure of the drug trade. Yet at the same time, these communities lack the most elementary public services, such as schools, sewerage, drinking water, health services, paved streets and police protection, and they have no access to any kind of serious cultural activity (Bernales, 1989).

Although the drug economy has given the peasants jobs and better incomes, these immediate benefits are costing them dear: the cost of living in coca-growing areas has risen significantly, and payment in cash has taken the place of the traditional forms of small-scale barter and mutual support which were a source of stability and equity in indigenous communities. Foodstuffs such as potatoes and maize began to be in short supply as labour was absorbed by the cultivation of coca. In short, the economy based on self-sufficiency was replaced by a mercantilized and impersonal economy far removed from the community spirit of the peasant.

Another aspect of the social impact of drugs is the great attraction exerted by coca-growing regions on migratory flows, although this must also be seen as part of a larger problem affecting the rural areas of the Andean countries in general, characterized as they are by deterioration and pov-

erty (Reyes Posada, 1989). The big migratory flows to the high jungle areas of Peru and the eastern part of the Chapare region of Bolivia were due to the peasants' intention of planting coca or finding employment as casual workers in its harvesting, as a survival alternative. At all events the narcotics economy has absorbed large numbers of persons made jobless by the crises in the tin and copper industries (Comisión Andina de Juristas, 1990). Among the causes of these migrations, mention has been made of the international drug trade, together with the constant impoverishment of the peasant economy due to the low prices of alternative tropical crops (De Rementería, 1990).

The social repercussions of drugs are also to be seen in the employment structure, for the narcotics industry is an important employer of labour in Bolivia, Colombia and Peru, giving direct employment to between 600 000 and 1 500 000 persons, according to various estimates. Of these, some three-quarters are engaged in growing and harvesting coca leaves; almost a quarter are "stompers", who mix the leaves with crude chemical products such as kerosene, using their bare feet; several thousand work in the clandestine laboratories where the paste is turned into refined cocaine, and a thousand or so—including the multimillionaires who own the cartels—run the import and export activities and manage the finances. In addition, a much larger number of persons earn a living from drugs indirectly through the multiplier effect that these activities have on the local economies (United Nations, 1990).

The mining crisis in Bolivia and Peru was a heavy blow to the trade union movement; as the worker organizations were utterly disrupted when thousands of workers in the sector were thrown out of work. In Bolivia, the workers in the mines which were nationalized in 1952 and run thereafter by the Bolivian Mining Corporation (COMIBOL) originally came to 27 000, but now number only 6 000. In addition to this crisis, there was the problem of smuggling, which led to a large number of further sackings because of the impact of its unfair competition on local industries. The ex-miners and ex-industrial workers thus thrown out of work swelled the ranks of the reserve army of the traffickers, joining them as coca producers or as members of the network engaged in distributing and selling drugs. At the same time, the coca mafias—taking

advantage of the illicit nature of the drug industry—have trampled ruthlessly on workers' rights, particularly as regards wages (which are frequently paid in the form of *bazuco*), freedom of organization and collective negotiation, occupational safety and health, etc. The prevailing political and social instability also contributed to the breaking up of trade union organizations.

Another social effect of the drug trade has been the appearance of "narco-squires", especially in Colombia. The "nouveaux riches" created by illicit drug trafficking have consolidated their economic and political power by marrying off their sons with heiresses of the Colombian oligarchy, and their conversion in this way into new landowners has had obvious effects on the agricultural economy and the system of land tenure. Indeed, studies on the agrarian process begun by the drug traffickers coincide in describing this as a "counter-agrarian reform" which, in contrast with the aims of true reform programmes, has re-consolidated a structure of latifundios (Camacho Guizado, 1989).

If the annual inflow of money into Colombia from cocaine exports is estimated at between US\$300 million and US\$1 billion, then the investments in land purchases by the drug traffickers amount to between 8% and 23% of these totals. According to a study by Sarmiento (1990), at the end of 1988 the drug traffickers owned a million hectares of land. In that year, the total area of rural Colombia was 36 197 200 hectares, so that the drug traffickers' properties amounted to 2.8% of that total and 4.3% of the productive land. The intervention of the narcotics economy in landowning has had an impact on land tenure, since there has been an increase in outright land ownership (from 75% in 1960 to 88% in 1988), while there has been a decline in tenancy (from 9% to 3.2%) and sharecropping (from 14% to 5.6%) over the same period. Moreover, according to the same study, the area of influence of the drug traffickers has expanded through their participation in national agricultural production and in credits for commercial crops. The same thing has happened in stock-raising, through their participation in cattle slaughtering and credit. Among those who have not sold their land to them, the rich landowners are faced with higher production costs, partly because of the higher wages paid by the "narco-squires", while

the poor peasants are obliged to abandon their land or end up by selling it at a very low price, because of the situation of insecurity and violence to which they are subjected.

As well as gradually taking the place of the old landowning families, the "narco-squires" are imposing new rates of change and forms of operation: they are favouring selective rather than intensive cattle-raising, the cultivation of African oil palms, industrial shrimp raising, some traditional crops

such as rice and cotton, and the poultry industry. As a specialist in these matters notes, the drug traffickers "are taking up a double challenge: that of establishing their social domination, by legitimizing themselves as a elite which is reorganizing rural social relations, and that of modernizing agricultural production, thereby improving the living standards of rural workers and supplying domestic and external markets" (Reyes Posada, 1989).

III

The role of ECLAC

In the face of the drug trafficking problem the United Nations has been building up an important body of doctrine and action, in which key elements are the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (Vienna, 1988) and the Policy Declaration and Global Programme of Action adopted by the General Assembly on 23 February 1990 at its Seventeenth Special Session.

These documents give action against the abuse and illicit trafficking of narcotics high priority for the international community, and they reassert the principle of shared responsibility. They emphasize that the United Nations must be the main centre for coordinating concerted action in line with the United Nations Charter and the principles of international law: especially respect for the principles of refraining from the threat or use of force in international relations; the sovereignty and territorial integrity of States; non-intervention in the domestic affairs of States; and the provisions of the international conventions on the fight against drugs. These instruments also emphasize that in that fight greater international cooperation is needed in order to increase rural development programmes and other economic development and technical assistance programmes designed to reduce the production and illicit trafficking of drugs by strengthening the economic, judicial and legal systems of the developing coun-

tries affected by the problem, including those used as areas of transit.

ECLAC has constantly shared the central concerns of the United Nations in respect of the drug problem and has carried out various kinds of activities in this field. At its twenty-third session (Caracas, May 1990), the Commission adopted resolution 515(XXIII) on activities of ECLAC in the fight against drug abuse. This resolution gives high priority to the search for solutions to the serious problems caused by the production, trafficking and consumption of drugs in the region, and urges member countries to strengthen their cooperation at the regional level in the fight against all forms of illicit drug trafficking and to develop policies for the substitution, reduction and/or elimination of narcotic crops and the prevention of drug consumption and abuse in accordance with the principles of the United Nations Charter, international law, and, in particular, respect for the sovereignty and territorial integrity of countries, for their respective laws, and for the principle of non-intervention in the internal affairs of countries.

In that resolution, the Executive Secretary of ECLAC is requested to study regional forms of implementation of the Global Programme of Action and the United Nations Decade against Drug Abuse, proclaimed by the General Assembly for the period between 1991 and 2000, and is recommended to intensify ECLAC's activities in this field, assigning particular importance in the design of future action to:

i) The study and formulation of measures to determine and remedy the economic impact of the production, illicit trafficking and consumption of drugs in the region;

ii) Consideration of any follow-up to the study currently being undertaken in the United Nations system under the terms of resolution 44/142 on drug trafficking and abuse;

iii) Support for national programmes of alternative development and interdiction and prevention of the production, transport, trafficking and consumption of drugs, through the preparation of

studies and policy guidelines and the organization of practical courses to back up community action in these fields, and

iv) The provision of assistance to member countries while so request in the study of national policies to strengthen community action to prevent and reduce the trafficking and consumption of illicit drugs and psychotropic substances, while also stimulating the establishment of national information and exchange networks among institutions dealing with this subject.

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Ideology and development: Brazil, 1930-1964

*Ricardo Bielschowsky**

This article deals with the intellectual production on the Brazilian industrialization project from the 1930s to the 1960s. It may be noted that Brazil is probably the Latin American country where the seminal ideas of ECLAC on this subject gained the broadest acceptance.

An analysis is made here of the five main currents of economic thinking which existed in Brazil during the period, namely, three variants of developmentalism, neo-liberalism –to the right of developmentalism–, and the socialist current, which was to the left of it.

The concept which predominated throughout the period was developmentalism, the main elements of which are the high value assigned to industrialization as a way to development, and the importance of the role of the State in planning, financing and investment in those sectors where private enterprise is insufficient.

It is noted that although developmentalism ceased to be the central guiding theme of the economic debate in the 1960s, the developmentalist State was to last considerably longer in time.

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Introduction

The evolution of economic thinking in Latin America belongs much more to the field of the history of the countries of the region than to the field of economic theory. The fact is that the fascinating side of this intellectual history lies not so much in its possible contributions to economic theory as in the variety and creativeness of the ideas associated with its historical context. The reason why it is so extraordinarily interesting is precisely the indissoluble interaction between its analytical and historical dimensions.

Essentially, this intellectual history is a chapter in the history of the region which describes the basic propositions and analytical bases of the various economic development projects put forward –almost always with a heavy dose of political passion– from the 1930s onwards.

This article tells the story of the intellectual production connected with the industrialization project of Brazil, from the 1930s to the 1960s. This was perhaps the country where the original ideas of ECLAC found their widest and most rapid acceptance, and it also concerns the story of the spread of these ideas.

The period in question, when the Brazilian industrial system was being established, has attracted a large number of historians who have explored the main aspects of the economic, political and social formation of Brazil. Even so, however, there are some gaps, among which special mention must be made of the evolution of the views which economists and other intellectuals then expressed on the economy of that country.¹

¹The only study which goes into this subject in depth is that of Mantega (1984), although, while it makes brief incursions into the non-marxist thinking of the 1950s and 1960s, it concentrates preferentially on the marxist thinking of the latter decade. The other relevant contributions (very few in number) are of an introductory nature, such as the studies by Magalhães (1964 and 1981) or else are of limited scope, such as the studies by Lima (1963) and Falangiello (1972) on Roberto Simonsen; in addition, there is a study on the thinking of Ignacio Rangel in connection with the crisis of the early 1960s (Cruz, 1980), and a study on economic thinking and the relations between agriculture and industry (De Carvalho, 1978). This short list must also include a mention of the introductory chapters to a collection of texts by Caio Prado Jr. (Iglesias, 1982) and Celso Furtado (De Oliveira, 1983).

This article is a summary of a study by the same author which seeks to fill this gap (Bielschowsky, 1988). In the course of the research on which this study was based, the extensive economic literature of the time, as published in books, specialized journals and government documents which marked a whole era, was collected, systematically organized and appraised.

In the case of the period in question, there would be no point in describing at length the Brazilian theoretical production in the field of economic science, for apart from being slight in volume, this contribution was essentially a mere breakdown at the national scale of the only important Latin America analytical contribution of that period: the work of ECLAC, which has already been extensively studied. It was therefore the historical dimension of economic thinking rather than its analytical content which formed the kingpin of the study on which this article is based.

It is interesting to note the lack of any academic commitment among many of those who took part in the economic debate of that period. This is easy to understand, as economic thinking at that time was not shaped in theoretical academic circles. Not only were the courses on economics few in number and of low quality, but they also lacked the necessary theoretical orientation. As an indication of the amateur spirit which predominated in university centres dealing with economics in Brazil, it may be noted that up to the 1960s none of them had full-time professors in this field, and the first post-graduate course was only given in the mid-1960s in the Getúlio Vargas Foundation. Before that, there had only been university extension courses on planning organized by ECLAC in collaboration with the National Economic Development Bank (BNDE).

This article analyses the economic thinking that was involved at the political level in the debate on the Brazilian industrialization process. The key concept around which this analysis is organized and which gives it unity is that of "developmentalism".

Here, we understand by "developmentalism" the ideology of the transformation of Brazilian society defined by an economic project based on the following fundamental postulates:

i) Integral industrialization is the way to overcome poverty and underdevelopment in Brazil;

ii) There is no possibility of achieving efficient and rational industrialization of the country through the spontaneous play of the market forces, and it must therefore be planned by the State;

iii) This planning must define the desired expansion of the economic sectors and the instruments for promoting such expansion;

iv) The State must also guide that expansion by procuring and managing financial resources and making direct investments in those sectors where private enterprise is insufficient.

Section I of this article describes the basic features of the five main currents of thinking which existed in the period under analysis, namely, the three variants of developmentalism (private sector developmentalism, "non-nationalist" and "nationalist" public sector developmentalism); neoliberalism (a current to the right of developmentalism), and the socialist current (to its left). With respect to each of the first four currents, reference is made to the work of the most representative economists of the time (Eugenio Gudín, Roberto Simonsen, Roberto Campos and Celso Furtado), and mention is also made of the thinking of Ignácio Rangel, who, because of his independent approach, cannot be classified in any of the main currents.

Section II describes the evolution of the developmentalist controversy and analyses the historical factors behind it. The periods used correspond to the evolution of economic ideas and their relations with the various economic and political situations through which the country passed in the decades under analysis. In order to make it easier to understand this evolution, the key concept used is that of the "ideological cycle of developmentalism" whereby developmentalist thinking originated between the 1930s and the end of the Second World War, came to maturity in the following ten years, experienced its boom period during the administration of President Kubitschek (1956-1960) and ran into crisis in the early 1960s.

Some immediate words of warning are called for here. First of all, this is not a study on the nature of the Brazilian State, but on the economic literature in Brazil; thus, when it is stated, for example, that the crisis of developmentalist economic thinking—as defined here—took place in the early 1960s, this is in no sense a judgement on the Brazilian developmentalist State, whose strengthening after

the 1964 military coup is an unquestionable fact. Nor is this any kind of investigation of the economic ideologies of the social classes in Brazil, since the article's aim in this respect is only to make a modest marginal contribution with reference to the economic thinking disseminated by business associations such as the National Confederation of Industry (CNI). Finally, it should be noted that this research project is strictly an "intellectual history": it is not, therefore, a research project on economic history or on political history, and much less a temerarious attempt to explain real history on the basis of the history of ideas.

Before going any further, it may be useful to give a brief description of the analytical framework underlying the Brazilian developmentalist debate.

The fact that this debate showed little commitment to the rigorous demands of academic production obviously does not mean that those who participated in it were immune to the influence of what was being written on development theory. Indeed, the many anti-liberal theoretical arguments which appeared in this field –put forward both by members of ECLAC and by those outside that organization– were frequently set forth by economists who were defending industrialization in the difficult contest against the theory and ideology of the supremacy of the market, which was long established in Brazilian tradition.

The main arguments used in the confrontation with the liberal theories are set forth below. If a list were made of the number of times those arguments were used in the Brazilian debate of the 1950s, we would certainly note the more frequent use of the arguments developed by ECLAC (the first three) and those which ECLAC analysed and helped to disseminate (the fourth and fifth), with much less use of the others:²

Arguments	Used by ECLAC	Used by Brazilian economists
Deterioration of the terms of trade (Prebisch-Singer)	Yes	Yes
Unemployment/deterioration of the terms of trade (low international demand for commodities)	Yes	Yes
Structural imbalance in the balance of payments	Yes	Yes
Vulnerability to economic cycles	Yes	Yes
Inefficiency in the transfer of agricultural techniques to tropical crops, compared with the transfer of industrial techniques	Marginally	Yes
External economies	Marginally	Yes
Indivisibility of capital	Marginally	No
Infant industries	No	Yes

A mere list indicating the use made of the arguments is not enough, however, to give a true idea of the influence that ECLAC had on the conceptual basis of Brazilian industrialization. The most important feature of ECLAC's theoretical contribution to the Brazilian debate was that it provided developmentalist economists with what could be called a new analytical system: the theory of peripheral development.

Although it must be acknowledged that the coherence and breadth of the ECLAC contribution were only accurately described in later studies consolidating the ideas of that organization (for example, in ECLAC, 1969 and in Rodríguez, 1980), it would nevertheless be no exaggeration to say that the combination of the various elements in ECLAC's explanation of what was happening in the economies of Latin America formed a whole new analytical system. The elements of this system which most strongly influenced the thinking of the Brazilian developmentalist economists (especially those of the nationalist current) were the following:

i) The identification of underdevelopment as a condition of the periphery (the "centre-periphery" concept);

ii) The identification of the process of spontaneous industrialization which had been taking place since the 1930s, and the recognition of its

² Except for the argument of the "external economies", which was also considerably used. It must not be forgotten either that the argument of infant industries had considerable currency in the 1940s.

historical significance for the underdeveloped economies of the continent;

iii) Industrialization of the typical underdeveloped structures of the periphery, seen as an unprecedented and uncertain pattern of development (the low degree of diversification and the structural heterogeneity would give rise to perverse tendencies, namely, tendencies towards unemployment, deterioration of the terms of trade, external imbalance and inflation);

iv) The interpretation of inflation as a phenomenon with structural causes;

v) Industrialization seen as a process of import substitution;

vi) The need for planning and strong State intervention, presented as a corollary of the diagnosis of structural imbalances typical of the spontaneous industrialization process in the peripheral economies.

I

The currents of thought and the main economists advocating them

The conceptual picture of the economic thinking of the period under analysis is organized, as already noted, in terms of currents of economic thought. This is shown in a summarized manner in table 1, where the currents of thought are defined on the basis of their basic economic projects. Our key concept is that of developmentalism. As we said earlier, developmentalism was the project which aimed to overcome underdevelopment through integral industrialization backed up by planning and with strong State support. The five currents of thought which were identified on the basis of this concept (the neoliberal, the three developmentalist currents and the socialist current) allow us to classify within them the great majority of the economists and intellectuals who took part in the Brazilian economic debate over the period 1945-1964, the main exception being Ignácio Rangel.

1. *The neoliberal current*

This current, together with that of the nationalist developmentalists, was the most important expression of economic thinking in the period under analysis. It always played a prominent part in the economic debate, giving rise to economic policies that were criticized by the developmentalists, and criticizing in its turn the proposals of the latter.

Brazilian economic ideology from the early nineteenth century until the 1930s was liberal by tradition. The international crisis, however, and the political, economic and social changes which followed it, weakened its real support base. From that time onwards, other conceptions of Brazilian econ-

omic development arose. In response to this, the liberal ideology had to undergo changes to enable it to stand up to the new realities, and Brazilian neoliberalism was the result of this process.

In essence, the neoliberal economists continued to defend the system of the market as the basic formula for economic efficiency. Consequently, they were primarily liberals. The prefix "neo" has a very precise meaning: it reflects the fact that most Brazilian liberals came to admit, in the new situation prevailing after 1930, the need for some State intervention to clear up the "imperfections of the market" which—as they themselves acknowledged—were affecting underdeveloped economies like that of Brazil. This is a similar position to that of the liberals, who made concessions to Keynesianism by admitting the justification for anticyclical measures as a way of bringing back developed economies to a situation where, in their opinion, the market mechanisms could once again guarantee balance and efficiency.

The position taken by the economists of the neoliberal current in Brazil was characterized by three fundamental aspects:

i) They were in favour of the reduction of State intervention in the Brazilian economy;

ii) They consistently expressed their support for policies aimed at monetary and financial balance;

iii) They did not propose measures to support the industrialization project, and indeed, many of them were against the very idea of industrialization (instead, they favoured the idea of the "agricultural vocation").

Table 1

BASIC CURRENTS IN BRAZILIAN ECONOMIC THINKING, FROM THE MID-1950s TO THE EARLY 1960s

		Currents in economic thinking			Basic features		
Main currents	Main nuclei	Main economists	Main organs of dissemination	Theoretical orientation	Basic economic project	Basic theories (idéas-force)	Interpretation of the growth process
Developmentalist	Neo-liberal	Getúlio Vargas Foundation, National Confederation of Trade, Trade Association of São Paulo, National Economics Council (CNE)	Eugénio Gudín Octávio G. de Bulhões Dénio Nogueira Daniel de Carvalho	<i>Revista Brasileira de Economia</i> (RBE) <i>Revista do CNE</i> <i>Digesto Econômico</i> <i>Carta Mensal</i>	Classical and neo-classical theories (liberalism)	Balanced growth through the market forces	There is no such thing as unemployment in Brazil, only low productivity
	Public sector (non-nationalist)	Brazil-United States Joint Commission, National Economic Development Bank (BNDE)	Roberto Campos Ary Torres Lucas Lopes Glycon de Paiva	<i>Revista Brasileira de Economia</i> (RBE) <i>Digesto Econômico</i> <i>Carta Mensal</i>	Post-Keynesian eclecticism	Industrialization at a rate compatible with balance, with heavy participation of foreign capital and partial planning	Theory of "bottlenecks/growth points"
	Private sector	National Confederation of Industry (CNI) FIESP	(R. Simonsen) J.P. de A. Magalhães Nuno F. de Figueiredo	<i>Estudos Econômicos</i> <i>Desenvolvimento e Conjuntura</i>	Post-Keynesian eclecticism Prebisch	Industrialization with State protection for national industrial capital	Credit for production as an instrument of growth
	Public sector (nationalist)	National Economic Development Bank (BNDE), Economic advisory team of Vargas, <i>Clube dos Economistas</i> , ECLAC, ISEB	(R. Simonsen) Celso Furtado Rômulo de Almeida Américo B. Oliveira Evaldo C. Lima	<i>Estudos Econômicos</i> <i>Revista Econômica Brasileira</i> (REB)	Post-Keynesian eclecticism Prebisch	Planned industrialization, strongly supported by State enterprises	ECLAC theories (inward-looking development, structuralism, etc.)
Socialism	Brazilian Communist Party, Instituto Superior de Estudos Brasileiros (ISEB)	Caio Prado Júnior Nelson W. Sodré A. Passos Guimarães Aristóteles Moura	<i>Revista Brasileira de Estudos Sociais</i>	Historical materialism	Measures to make capitalist development viable in order to pave the way for socialism. Planned industrialization on strictly national bases, and agrarian reform	Theory of the anti-feudal and anti-imperialist phase	Two basic contradictions stand in the way of economic growth: the monopoly of land ownership, and imperialism
The independent thinking of Ignácio Rangel							
		Ignácio Rangel		Adam Smith Keynes Historical materialism	Planned industrialization, strongly supported by State enterprises	Theory of basic duality	Import substitution (1950s) and crisis of realization (1960s)

Position with regard to the main specific issues of Brazilian economic development										
Main currents	Domestic financial support for investment	Foreign capital	State enterprises	Planning	Protectionism	External deficit	Inflation	Wages, profits and income distribution	Agrarian reform	
Neo-liberal	Structuring of financial system	In favour of incentives	Flatly against	Position between opposition and tolerance of attempts at partial planning	In favour of heavy tariff cuts	Inflation seen as basic cause	Full employment seen as basic cause. Emphasis on stabilization policies	Neo-classical argument of marginal productivity	Against	
Developmentalist	Public sector (non-nationalist)	Taxation	In favour of incentives	Tolerant, when private capital (national or foreign) shows no interest	In favour of partial planning	In favour	Possible without inflation, but generally caused by it	Full use of capacity seen as basic cause. Emphasis on stabilization policies	Income distribution reduces growth	No position
	Private sector	Incentives for reinvestment of profits	In favour, but recommends controls	Moderately favourable	In favour	Strongly in favour	Structuralist	Emphasis on usefulness of expanding credit	Defence of profits (argument of reinvestment)	In favour of limited reform
	Public sector (nationalist)	Taxation	In favour, provided there are controls, but against foreign capital in the public and mining sectors	Strongly in favour	Strongly in favour of general and regional planning	In favour	Structuralist	Structuralist	Income concentration obstructs growth	In favour
		Taxation	Strongly against (except with respect to credits)	Strongly in favour	Strongly in favour	In favour	Emphasis on lack of State controls (especially on remittances of profits)	Vagueness in interpretation. Emphasis on defence of real wages	Income redistribution (argument of the domestic market) through agrarian reform and trade union movement	Strongly in favour
Socialism										
Ignacio Rangel	Structuring of financial system	In favour, but with controls; reluctant to accept foreign credits and against foreign investment in public services and mining	Strongly in favour	Strongly in favour (with his own form of partial planning, via foreign trade)	In favour	Imbalance due to lack of State controls. In favour of State monopoly of foreign trade	Oligopolistic/oligopsonistic structure of food marketing seen as element generating inflation. Hypothesis of existence of extensive unused resources	Raising wages as a means of stimulating employment and use of idle capacity	In line with the theory of duality	

Various different types of economists came under this definition. Among the neoliberals, for example, were Eugenio Gudin and Daniel de Carvalho, whose ideas were associated with the principle of the classic international division of labour and who were against protectionism and the industrialization strategy. In this, they were accompanied by economists such as Octácio Gouveia de Bulhões, Denio Nogueira and Alexandre Kafka, who had a much clearer perception of the force and irreversibility of the industrialization process that was underway, but whose essential concern in the debate was the achievement of monetary stability. Moreover, not only did they never propose policies in support of industrialization, but they almost always criticized them on the ground that they would give rise to macroeconomic imbalances (it should be noted that this classification does not cover those who, while stressing the need to control inflation and keep the balance of payments in equilibrium, applied a developmentalist frame of reference, as in the case of Roberto Campos, the leader of the non-nationalist developmentalist current).

The neoliberals strongly opposed the growing State intervention in the Brazilian economy. However, they made some concessions compared with what a pure liberal position would have been on the subject. Thus, for example, they accepted the idea that the government should have some influence on the country's external trade in order to tackle the problems resulting from the features of international supply and demand for commodities. They also accepted the idea of government support for activities connected with health, education and technical assistance to agriculture, as well as some credit support for infrastructure activities (which they believed, however, should preferably be carried out by foreign firms and never by State enterprises).

Eugenio Gudin was the leading neoliberal theoretician. His importance in Brazilian economic thinking went beyond the bounds of his long and influential period of conservative leadership, however: he was also a pioneer in the teaching of economic theory and the legitimization of the profession of economist in Brazil. In this respect, he may be considered as the father of all subsequent Brazilian economists.

Gudin dealt with all the main aspects of Brazilian economic affairs with easy assurance and framed his questions in a lively and coherent

manner. His written works, almost always phrased in a manner easily accessible even to those who were not experts in economics, not only attracted the attention of conservative economists and politicians looking for arguments to back up their proposals, but also that of developmentalist intellectuals. The latter were continually obliged to counter Gudin's analyses, both because they recognized the practical importance of those studies and also because of the solid and coherent arguments which they contained. In view of the way in which he publicized the neoliberal views, it is easy to understand the importance assumed for the developmentalists by the antiliberal interpretations inspired by Prebisch and, indeed, by the ECLAC documents in general.

The limited length of this article prevents us from describing Gudin's thought in detail, but by way of illustration of his style of reasoning, a summary may be given of the way he dealt with the issues of external trade and inflation.

With regard to the first of these, Gudin gave a new interpretation of the main statements in liberal theory on the problems revealed by the cyclical depression of the period between the wars. He recognized that there were special features in the way the crisis affected the "reflex" economies—a term coined by him in 1940—and he continued to admit this during the many years of the dollar shortage which followed the Second World War. He recognized the problems deriving from the low elasticity of supply and demand of commodities and the fragility of the "reflex" economies *vis-à-vis* the cyclical oscillations of the developed economies. Unlike the developmentalists, however, this type of recognition did not lead him to advocate industrialization. For him, the solution lay in using a number of measures of a preventive nature, designed essentially to influence prices and the level of production. His concessions with regard to the maximum permissible State intervention in external trade did not go any further than this. In his opinion, the Brazilian economy was simply not ready for industrialization, and the proof of this was that the market forces did not promote it themselves.

With regard to inflation, Gudin systematically referred to the idea of the existence of full employment in the Brazilian economy—"hyperemployment and hypoproductivity", he used to say—as though he were recognizing, in a Keynesian manner, the importance of taking account of the

capacity of the system of production to respond to demand pressures. In this sense, the use of the term "monetarist" to describe Gudin is very much open to question. In another two senses, however, it is not: firstly, from the point of view of the structuralist interpretation, to which Gudin was strongly opposed, and secondly, from the angle of Keynesian-type criticisms, according to which the economic policy proposed by Gudin was of a monetarist nature, both because it held that the idea of the existence of full employment was a fallacy, and because it did not take account of the depressive effects of stabilization policies.

2. The developmentalist currents

As already mentioned earlier, three currents of developmentalism may be distinguished: one consisting of people associated with institutions in the private sector of the economy, and another two made up of people in the public sector (which we have called respectively the nationalist and non-nationalist currents). The features which they shared were fundamentally the aim of establishing a form of modern industrial capitalism in the country, and the conviction that in order to achieve this it was necessary to plan the economy and practice various forms of government intervention. Their distinctive features are outlined below:

i) The developmentalist economists had somewhat different concerns and manners of expression, according to their professional careers. Those who worked in the private sector naturally defended business interests in a manner which was not shared by those who worked in the public sector, because of the commitments which the latter had to assume by virtue of their office.

ii) In the public sector, there were two basic developmentalist positions with regard to State intervention. The economists we have called non-nationalist proposed private solutions for industrial and infrastructural projects, using foreign or national capital, and they were willing to accept State intervention only in the latter case. Those we have called nationalists, on the contrary, called for the nationalization of the mining, transport and energy sectors, as well as public services in general and some branches of basic industry. Among the private sector developmentalists, the positions they held on this subject were not uniform, since some of them were close to the first of these positions, while others took a more nationalist view.

iii) The three currents adopted different positions on control of inflation: the non-nationalist current was in favour of carrying out monetary stabilization programmes, while the other two were against this. The latter, in turn, differed in their analysis of the problem. In the private sector, the great concern was to avoid the reduction of credit, and they therefore did not adopt the structuralist interpretation, whereas the nationalists were concerned both over the reduction of credit and the decapitalization of the State, and in the 1950s they took a structuralist view of the question of inflation.

Developmentalism made its appearance in the period 1930-1945. The international economic crisis, its domestic repercussions, and the national policy centralization after the 1930 revolution are among the main factors which explain the appearance of this economic ideology.

It may be noted that the two pillars of developmentalism were created simultaneously. Firstly, in the private sector, bodies representing business interests, such as the National Confederation of Industry, the Federation of Industry of the State of São Paulo (FIESP) and others broadened their range of demands in this era. Through these business associations, Roberto Simonsen conceived and publicized an industrialization strategy involving planning and heavy State intervention. The process of raising the level of consciousness only brought definite results in the second half of the 1950s, but Roberto Simonsen's undisputed leadership among industrial entrepreneurs had already secured a degree of initial legitimation.

Secondly, from 1930 onwards, and above all during the period of the *Estado Novo* (1937-1945), various bodies were established in the public sector aimed at dealing with problems of national scope. Naturally, their civil and military technicians were forced to reflect on the great problems of national economic development in a broad and integrated manner, and this helped to give rise to the developmentalist ideology.

The developmentalist current in the private sector was based on the first of these pillars. The developmentalist currents in the public sector—especially the nationalist current—were based on the second of these, but they were greatly influenced and received much support from Roberto Simonsen. In the second half of the 1940s, for example, when the liberalism that prevailed in the

early part of the administration of President Dutra usually managed to immobilize the bodies founded by Vargas, Simonsen set up a Department of Economics in the National Confederation of Industry and appointed Rômulo de Almeida to head it. After Simonsen's death in 1948, Almeida was to be the main developmentalist economist in Brazil until the mid-1950s, when the leadership passed to Celso Furtado (among the nationalists) and Roberto Campos (among the non-nationalists).

The year of Simonsen's death coincided with that of the establishment of ECLAC. This historical coincidence is a landmark in the evolution of developmentalism, because soon ECLAC was to begin to help to continue the work of legitimation of the developmentalist project, making up for the loss of its main defender, and also offering an important advance: a powerful set of anti-liberal analytical instruments which was partly incorporated by the private sector developmentalists and incorporated in its entirety by most of the nationalist developmentalists.

a) *Developmentalism in the private sector*

The historical events that came after the 1930 revolution opened up a new prospect for a small group of industrialists organized in trade associations: namely, that the industrial sector would have a central role in the future of the national economy. This small entrepreneurial elite lived through what may be called a pioneering experience in planning. In the corporative scheme of the *Estado Novo* they participated in several of the many government economic bodies which were set up. Thus, there was a fertile crossing of ideologies between their view of the world and the developmentalist ideas and concepts which arose in the new bodies, where discussions were held and decisions taken on such issues as external trade, energy, transport, the iron and steel industry, and many other national-scale concerns.

The economics department of the National Confederation of Industry which had been set up by Simonsen in 1946 was to be the main source of the formulation of the economic ideas of private sector developmentalism in the following years and in the 1950s. These ideas reflected a dual concern: to defend a project for planned industrialization and to protect the interests of private industrial capital. Consequently, the private sector developmentalists could both further economic policy

proposals *vis-à-vis* all the developmentalists and they could focus their attention on proposals designed to defend specific and sometimes immediate interests of the business class.

Simonsen was the great ideologist of developmentalism. In order to gain a proper idea of his intellectual influence, it must be stressed that his importance in Brazilian economic thinking lies in the ideological content of his works. At the analytical level, in contrast, his formulations were usually lacking in some respect, which is understandable in view of the theoretical vacuum which predominated in the underdeveloped countries in the 1930s and 1940s and which was only overcome in Latin America after the emergence of the ECLAC theories.

As far as economic ideology is concerned, however, Simonsen's work contains all the basic elements of the developmentalist repertory of the currents which, in the 1950s, favoured the establishment of industrial capitalism in the country: for example, the understanding of the fact that a process of profound restructuring of production patterns was taking place in the Latin American economies and that this offered the historical possibility to overcome underdevelopment and poverty; the idea that the success of the industrialization project would depend on strong government support (with planning and protectionism), and the proposal that the State should make direct investments in the sectors where the part played by private enterprise was insufficient.

b) *Non-nationalist public sector developmentalism*

The non-nationalist developmentalist current in the public sector –not as strong in numbers as the nationalist current, but quite active and influential in the government sphere– was made up of economists who believed that foreign capital could make a big contribution to the industrialization process.

From its origins in the 1930s and 1940s, developmentalism was an economic ideology with strong links to nationalism. Among those who believed that industrialization was the way to leave behind poverty, the majority felt that it was not possible to expect the aid of foreign capital for this purpose. The most radical of them saw foreign capital as a monolithic group of imperialist interests, basically antagonistic to the project. Among the more moderate nationalists, most of them felt that, at least in sectors vital to the industrialization

process such as energy, transport and mining, the State should ensure that there was national control over decisions.

The current which, for want of a better term, we are calling the non-nationalist developmentalist current consisted of the minority of economists who believed that the industrialization project could derive extensive benefits from foreign investments. Basically, it arose in the early 1950s in connection with the project during the second term of the Vargas administration which set up the Brazil-United States Joint Commission (1950-1954), responsible for studying 41 infrastructural investment projects, and the National Economic Development Bank (BNDE), set up in 1952.

Those responsible for this project, which was also supported by the nationalist developmentalists, included the main figures in non-nationalist developmentalism: Horacio Lafer, Valentim Boucas, Ary Torres, Glycon de Paiva, and—in a process of ideological preparation for a subsequent realignment—the then nationalist Roberto Campos.

At that time, the developmentalist project was coming to maturity. The enthusiasm with which these men supported the fundamental element of the developmentalist position—namely, the planned industrialization project—caused the differences separating them from the majority of their public sector developmentalist peers to retreat into the background. Little by little, however, their two basic divergences were taking shape:

i) Although they were not generally speaking completely against State investments, the non-nationalist developmentalists attacked the spread of State enterprises with the argument that the State should not occupy any space in which private enterprise could act more efficiently. As the specific conflicts arose in connection with investments in big infrastructure and mining projects, where private national capital simply did not have the necessary dimensions, the position of the developmentalists corresponded to the option for foreign capital, with preference for State capital.

ii) They emphasized the need to control inflation and had no hesitation in supporting monetary stabilization measures.

The most outstanding economist in this current was Roberto Campos. He had a good theoretical grounding in economics and unequalled critical capacity among Brazilian economists, and he was a

penetrating and able polemicist capable of confounding his most intelligent adversaries.

Viewed in the light of the real historical process experienced by Brazil, Campos appears against the background of the 1950s as a thinker who had the right ideas: he wagered on industrialization through the internationalization of capital and State support, and he won his bet.

In the Brazilian political panorama of the period considered here, Campos represents the “right” of the developmentalist position. On the one hand, he worked for the project to industrialize the country, for example, as the main formulator of President Kubitschek’s “Plan de Metas” and also as its main executant, in his capacity as Secretary-General and later President of the BNDE, between 1956 and 1959. He was responsible for the conception of partial or sectoral planning which governed the plan. The idea, worked out theoretically at a later date by Hirschman, was as follows: the ideal government intervention strategy would be to concentrate on the “bottlenecks” of the industrial system, so that these would be changed instead into points of burgeoning growth, since they would automatically generate market stimuli for the private sector in the remaining economic activities.

At the same time, Campos defended the idea of attracting foreign capital, even in the mining and energy sectors, and attacked the State solution in almost all cases where a private solution seemed possible. Furthermore, he disagreed with the structuralist interpretation of inflation, and although in his writings of that period he did not share the strictly monetarist position on this phenomenon, the importance he attached to the adoption of anti-inflation policies which could prove to be recessive caused his opponents to identify him politically with the orthodox position in this field of theory.

c) *Nationalist developmentalism in the public sector*

The centralization of power under Getúlio Vargas in the 1930s gave rise to a set of planning bodies (such as the Public Service Administrative Department, the Federal Council for External Trade, the National Petroleum Council, etc.) within which the first teams of civil and military technicians concerned with the problem of Brazilian industrial development were formed. Men like Barbosa Carneiro, Horta Barbosa and Macedo

Soares formed the embryo of the nationalist developmentalist current which, together with the neo-liberal current, was to be the most important line of thinking in the country in the 1950s. In those early days, some of the non-nationalists who were to gain prominence in the 1950s served their apprenticeship side by side with the pioneers. This was so, for example, in the cases of Rômulo de Almeida, Jesus Soares Pereira and Americo Barbosa de Oliveira.

In the period immediately after the war, the nationalist developmentalist current survived the liberalism of the Dutra administration in some centres of resistance, among them the Department of Economics of the National Confederation of Industry already referred to and the recently established Getúlio Vargas Foundation (where the group of Gudin and Bulhões was only to occupy the leading position from 1952 onwards, after the departure of Richard Lewinsohn and Americo de Oliveira). The second term of Vargas gave the nationalists fresh opportunities to organize themselves, through the establishment of institutions such as the Economic Advisory Group for the President and the BNDE. The great meeting of the nationalist developmentalists took place in the mid-1950s, when Celso Furtado and Americo de Oliveira set up the Economists' Club, a body grouping together several dozen technicians from the federal government and some developmentalists from the private sector.

The nationalist developmentalists, like the other developmentalists, defended the establishment of modern industrial capitalism in the country. Their main distinguishing feature was a strong inclination towards State intervention in the economy through policies to support industrialization – integrated as far as possible into a system of planning – including State investments in sectors considered to be of fundamental importance.

They considered that capital accumulation in these sectors could not wait for the initiative and arbitrary decisions of foreign capital and instead needed the control and direction of national capital: that is to say, the State, since the weakness of private national capital ruled out private solutions.

In particular, with regard to the sectors then dominated by big foreign capital interests – such as transport and electric power – or the sectors which such capital would have liked to dominate – such as petroleum and mining in general – the industrializa-

tion ideology took on a strongly nationalist and State-owned tone. The same was true with regard to some sectors of basic industry, especially large-scale chemical industry and the iron and steel industry. In the other industrial sectors, however, foreign capital was welcomed by the nationalist developmentalists. This is a point which is not always grasped by those interested in the history of Brazilian industrialization. This explains, for example, why the nationalist Lucio Meira was the great promoter of the "Plan de Metas" with regard to bringing the foreign automobile industry to the country. The restrictions which the developmentalists called for in these cases referred to the need for controls, especially on remittances of profits abroad, which they considered a serious threat to the balance of payments and hence to the continuation of the industrialization process.

As well as the emphasis on State investment, two other features of the nationalist way of thinking which distinguished it from the other developmentalist ideas may be mentioned. Firstly, the nationalist economists systematically defended the subordination of monetary policy to development policy. In this respect, they were allied with the private sector economists, but they differed from them in their interpretation of the process of inflation and the way to combat it: they introduced and disseminated ECLAC structuralism into Brazil and, with few exceptions, did not countenance short-term measures – which for the private sector developmentalists frequently included wage and tax reductions.

The other feature distinguishing the nationalists from the other developmentalist currents was their political inclination towards economic measures with a social content. The great majority of nationalist economists felt particular concern for unemployment, poverty and the cultural backwardness of the Brazilian population, as well as the archaic nature of the country's institutions. The influence that these aspects had on their thinking should not be exaggerated, however, since they were much less important than the proposals on State intervention and anti-inflation policy. In the 1940s and 1950s, the basic message transmitted by their texts was limited almost entirely to maintaining that industrialization was a process of change capable by itself of doing away with the conservative bases of society and making it feasible to

overcome poverty. The "reformism" of the nationalist developmentalists only clearly appeared in the early 1960s, already in the crisis situation which culminated in the coup d'état which deprived them of the historical time needed to redefine the developmentalist project in order to incorporate into their political agenda the necessary "basic reforms". We shall return to this point later.

Celso Furtado was the leading economist of nationalist developmentalism. After having participated from the very beginning in the initial discussions promoted by Prebisch in ECLAC, Furtado proceeded to apply the new ECLAC analytical scheme to the interpretation of the Brazilian economy. He disseminated it very skillfully in Brazil, and gave analytical consistency and unity to the economic thinking of a large part of the government technicians working in favour of the project for the industrialization of Brazil. He thus provided them with the analytical instruments needed to understand Brazilian underdevelopment and to combat the interpretations and proposals of their opponents. The powerful leadership exercised by Furtado is explained by his admirable capacity to combine intellectual creation with executive force and to open up a space for the implementation of development tasks. For these reasons, he became a kind of symbol of Brazilian developmentalist hopes in the 1950s.

His intellectual work in the period analysed here was a creative exercise of refinement, application and dissemination of structuralist thinking. His work contains the three features which, together, give its special quality to the political content of the economic thinking of the nationalists as compared with the other developmentalist currents. First of all, he emphasizes the need to defend the State's leadership in promoting development through investments in strategic sectors and, above all, economic planning. Secondly, his work contains the structuralist proposal that monetary and exchange policies should be subordinated to development policy, which was the basis of the nationalist arguments with regard to the stabilization programmes proposed by the IMF. Finally, it shows a commitment to reforms of social content: this commitment became increasingly prominent in his works, beginning with his defence of progressive taxation, continuing through the project for the development of the most backward region of the country –the creation of the Superintendency for

the Development of the Northeast (SUDENE)– and culminating in his support for agrarian reform.

His book *Formação Econômica do Brasil* is one of the main works of ECLAC structuralism. This book, which was immediately identified as a landmark in Brazilian economic literature, was one of the instruments used by him in his work of consolidating developmentalist awareness in Brazil, which needed a basis of historical arguments. This work led to great advances in the structuralist approach in the country.

In order to understand its importance, it must be remembered that in the early 1950s this approach was doubly vulnerable. First of all, the structuralist analytical proposal still lacked a systematic form. Secondly, in order to secure a good welcome for the proposal it was important to show that the historical evolution of the countries which continued to be underdeveloped in the mid twentieth century was necessarily different from that of the developed countries. Only in this way was it possible to legitimize the idea that their economic structures and the problems of their transformation were also different, to the point of calling for a judicious adaptation of the theories in vogue and an effort for the countries to work out their own theories. This book is a response to this dual vulnerability. Firstly, because even though it does not pretend to theorize on the structuralist approach, the clarity of its text automatically strengthened the message of the ECLAC theories. Secondly –and even more importantly– because it presented an historical study which was of decisive importance for the acceptance of that approach, at least in the case of Brazil.

3. The socialist current

Developmentalism advocated overcoming poverty and the backwardness of the Brazilian economy through industrialization. It was the ideology behind the economic project aimed at creating industrial capitalism in the country. To its left, there was a current of thought whose economic ideas were based on the outlook of the socialist revolution or transition to socialism. This current, made up of intellectuals associated with the Communist Party –and, in the early 1960s, also of intellectuals dissenting with the party– has been termed the "socialist" current in this study.

The contrast between the economic thinking of the socialist and developmentalist currents is enlightening. Like the developmentalists, the socialists defended the industrialization strategy involving heavy State intervention –as a way of “developing the forces of production”, in their language– and they also defended State investments in basic sectors of the economy, as well as control over foreign capital. The standpoint from which the socialists made their analyses was completely different, however, since all their reflections were based on the discussion of the phase of the socialist revolution, as defined by the Brazilian Communist Party. In the case of the question of State investments, for example, whereas the developmentalists proposed these investments merely as a way of guaranteeing industrialization, without going into further considerations of a political nature, the socialists saw this as part of the discussion on the transition to socialism and the political agenda to promote that transition. In fact, even though the leaders of the party viewed their intellectuals with some mistrust, the entire economic reflection of the socialist current was subordinated to the internal discussions in the party on their revolutionary tactics and their platform of political struggle. This was so in all the economic questions analysed: foreign capital versus nationalization; inflation and the balance of payments; agrarian reform, or any other economic policy issue of the period.

The socialist current was perhaps the group mainly responsible for the introduction into the economic debate of the aspects concerning the “production relations”. Moreover, through such men as Caio Prado Jr. and Nelson Werneck Sodré, it also had a great deal of influence on the introduction and dissemination of an historical perspective into the debate on the Brazilian economy. In spite of these indisputable merits, however, economic analysis proper was relatively weak in this current of thought.

The discussion of the revolutionary process had as its theoretical matrix historical materialism. The marxist idea that the historical evolution of mankind takes place through a well-defined succession of forms of production, and that these movements take place through the class struggle, dominated the socialists’ analysis in the political field and hence determined the main lines of their economic analysis. In reality, in the case of the socialists it is difficult to speak of the economic

theory underlying their analysis. On the one hand they rejected the application of current economic theory to the interpretation of the Brazilian economy, even more radically than the structuralists (who only proposed that it should be used in a selective manner, adapted to the case of the peripheral countries, and that the latter should have the right to formulate and use their own theories). On the other hand, they did not make an analytical effort even remotely comparable with that of the structuralists. Even the use made of marxist economics was quite limited. For example, the texts by Caio Prado Jr. –the most important intellectual engaged in the dissemination of the marxist analysis– were of a theoretical and didactic nature and did not deal with the analysis of the Brazilian economy.

The application of historical materialism to the Brazilian case led, in summary, to the idea that Brazilian society was passing through a stage in which it was emerging from the colonial export economy and was in transition towards a modern industrial economy. Up to that point, the interpretation would be identical with that of the developmentalists, were it not for two basic aspects: firstly, that this transition was seen as a necessary stage in the struggle for the establishment of socialism, and secondly, that in order to guarantee this it was necessary to proceed to the radical elimination of two contradictions inherited from the previous period: the monopoly of land ownership (the internal contradiction) and imperialism (the external contradiction). The economic analysis of the socialist current, which was deeply committed, as already noted, with the political struggles of the Communist Party, had as its points of reference and stimulus the struggle for agrarian reform and for the elimination of imperialism, and all the basic problems of the Brazilian economy were treated from that viewpoint.

The socialist current did little to analyse the issue of trade, and when it did so, its reflections were subject to the relationship between liberalism and imperialism. Inflation was also a secondary issue in the thinking of the socialist authors, and its treatment was well below the analytical level attained in the debate between structuralists and monetarists; in most cases, the main objective in presenting the arguments was to enhance the political conclusions that could be drawn from them: for example, that inflation was the result of exchange rate devaluation, which in turn was the result of the

shortage of foreign exchange caused by the remittance of profits abroad or the insufficient agricultural supply due to the monopoly of land ownership. The only study in the socialist current which represented a real effort at systematization of the treatment of the topic was that by Guimarães (1963), in which it was held that inflation was the result, primarily, of the concentrated structure of ownership and secondly, of an economic policy which was at the service of big capital (exchange reforms and lack of control over external trade, public expenditure and credit designed to increase profits or socialize losses). This interpretation had an affinity with another concern of the socialist intellectuals, especially Heitor Ferreira Lima and Aristóteles Moura, namely, that of proving that there was a great concentration of ownership, especially in the sectors of the economy where foreign capital predominated.

4. The thinking of an independent: Ignácio Rangel

Ignácio Rangel was the most creative and original of the analysts of Brazilian economic development. He worked in several specialized institutions dealing with the development process after the war. Between 1951 and 1954 for example, in the economic advisory team of President Vargas, he took part in the preparation of the projects for the creation of PETROBRAS and ELETROBRAS, and subsequently, in the BNDE, he took part in the execution of the "Plan de Metas" and was head of the Economics Department for a time. He was thus able to see Brazil from the privileged viewpoint of some of the main economic decision-making centres of the country.

Rangel was a socialist who, from the point of view of "political tactics", was close to the nationalist developmentalist current, while from the point of view of analysis and concrete economic policy proposals he was an independent. This independence prevents us from classifying him in the currents of thought described earlier, especially as he himself was the author of the analytical scheme which guided his reflections on the Brazilian economy.

In point of fact, and in contrast with the adhesion to ECLAC structuralism by the nationalist developmentalists and the adoption of historical materialism by the socialists, Rangel constructed his own analytical framework –the theory of the

"basic duality of the Brazilian economy"– and examined almost all the central issues in the economic debate of the time within that framework.

Rangel did not disagree with the basic theories of marxist historical materialism. He considered, however, that Brazil's form of insertion in the world economy, that is to say, the fact that it was a complementary or peripheral economy, demanded that such theories be assimilated in a critical manner.

In order to take account of this difference, Rangel divided the concept of production relations into "internal relations" and "external relations". Through this subdivision, he expressed his theory that the history of the country corresponded to a series of stages characterized by the simultaneous presence of two forms of production, i.e., a series of "stages of dualities". According to this theory, in the 1950s the country was in the third duality (the first was the phase of slavery/mercantile capitalism which took up a large part of the nineteenth century, and the second was the feudal/mercantile capitalist stage which began with the crisis of slavery in the last decades of that century). The third duality had begun with the crisis in the external relations of production which led to the serious problems of the 1930s. At that moment, the development of the national productive forces was obstructed by the contraction of the international market, giving rise to profound changes in the internal production relations and in the economy of the country. The "dominant formation" in the "internal pole" of the economy continued to be the latifundio, while in the case of the "external pole" the new dominant formation was industrial capitalism, which took the place of mercantile capitalism.

On the basis of these ideas, Rangel analysed the role of the State, planning, financial reform, the nature of Brazilian agriculture, etc. He also took on the whole of the left in the intense controversy over agrarian reform (he considered that such reform, although just, was not viable from the political point of view –in view of the strength of the latifundio owners– nor indeed was it necessary, not only because agriculture was not obstructing capitalist development, but also because such development itself carried out the function of undermining the basis of the "feudal" agrarian structure). He also analysed the Brazilian crisis of the early 1960s, adding to the economic factors involved in it the marxist idea, not previously applied in the country, that it was a "crisis of realization".

II

The evolution of economic thinking: the ideological cycle of developmentalism (1930-1964)

This section briefly summarizes the evolution of Brazilian economic thinking in the period 1930-1964. As in the previous section, attention is centered on the "developmentalist" debate, understood as that which took place with regard to the project for industrialization with heavy State support.

The periods used here in order to chart the movement of ideas were defined according to the main changes in the intellectual history of the industrialization project in Brazil. In the economic literature, four great phases may be identified in the process of formulation of that project: the birth of developmentalism (1930-1945), its maturity (1945-1955), the heyday of this current of thinking (1956-1960), and its crisis period (1961-1964).

1. *The birth of developmentalism: 1930-1945*

Among the studies on the history of Brazilian industrialization, there are several which show that an awareness of the need for industrialization existed since the last century (Carone, 1976; Dean, 1971; Luz, 1961; Leme, 1978 and Lima, 1975). The reading of these works makes it possible to identify, in the views expressed by supporters of industrialization prior to 1930, three elements which were also to be integrated in the ideological framework of the transitional period of the 1930s and 1940s: i) the attack on liberalism associated with the defence of protectionism; ii) the attack on liberalism associated with other forms of support for the industrial sector, such as credits and tax and tariff exemptions, and iii) the association between industry and "prosperity" or "progress".

This ideology of the dawn of Brazilian industrialization was marginal to the life of the country, just as industry itself was. In the defence of industry, it was not seen as a sector of fundamental importance for the transformation of Brazilian society, and the arguments only sought attention for the immediate interests of infant industry. The 1930s and the years of the Second World War were the starting point for profound changes.

At that time, four ideological elements appeared more or less simultaneously which were of fundamental importance for the developmentalist project and were superimposed on and went beyond the limits of the previous industrialization ideas.

Firstly, it was understood that it was necessary and viable to establish an integrated industrial sector capable of producing domestically the inputs and capital goods needed for the production of final goods. Secondly, it was understood that it was necessary to establish mechanisms for centralizing financial resources in order to make possible the desired industrial accumulation. Contributions were made to this, for example, by the discussions on the viability of great projects such as the pioneering National Iron and Steel Corporation (established in the first half of the 1940s). Thirdly, the idea that the State should support private enterprise ceased to be an isolated proposal of a few industrialists and gained greater legitimacy among the entrepreneurial and technical elites of the country. Fourthly, economic nationalism, which until then had shown itself very little in the country, came to be important. Not only was there an increase in the feeling that industrial development should be protected and in the desire to control the use made of national natural resources, but the idea was also introduced that industrialization required direct State planning and investments in transport, mining, energy and basic industry.

This was still the period of the "origins" of the developmentalist ideology. In order to avoid confusion in this respect, it must be recalled that the "revolution of the 1930s" was not an event that had anything to do with industrialization. To be exact, the current interpretation of its significance does not go any further than asserting that it marked the breakdown of the political hegemony of the regional oligarchies, thus opening up a space for the entry of new actors into the limited cast of the ruling elites of the country. At the most, it might be said—as in Ianni (1971)—that suitable conditions were created for the development of a bourgeois State.

Developmentalism –that is to say, the ideology of overcoming underdevelopment on the basis of a strategy of capital accumulation in industry– was only to mature and occupy the leading position in the second half of the 1950s. In the 1930-1945 period, there was a first, limited awareness of the project by a small elite of entrepreneurs and above all by a small nucleus of civil and military government technicians who formed the technical cadres of the new institutions set up by the centralized State under Vargas. The questions of national scope which these technicians tackled in their offices led them to think about the long-term problems of the economy and hence about the possibility of the historical solution of industrialization. This phenomenon was probably more important than the spread of an awareness of the importance of industrialization within the industrial class itself.

2. The maturity of developmentalism: 1945-1955

Developmentalism reached its stage of maturity between 1945 and 1955. The idea of maturity is used here in two senses: that of progress in the spread of developmentalist ideas in the economic literature, and that of progress in the analytical content of the proposals put forward. In this section, three markedly different stages in this process will be examined.

a) *The first stage: liberalism and the developmentalist resistance to it in the post-war transition (1945-1947)*

The democratic transition in the early post-war years brought with it intensive political and institutional mobilization in the country, and this naturally influenced Brazil's intellectual life. The establishment of political parties, the elections for President of the Republic and for the members of the Constituent Assembly, the preparation of the Constitution, the organization of new institutions in civil society, were all aspects which helped to create a climate of controversy that the country had not previously known.

With regard to economic problems, the debate was also enlivened by two very special circumstances. Firstly, because at the end of the war basic queries naturally arose about the economic future of the country at both the domestic level and with regard to its international relations. Secondly, because the wave of political liberalism was used by

the opponents of Vargas –and by the new government of President Dutra– as ideological support for dismantling the machinery for State intervention in the economy which Vargas set up during the *Estado Novo* and which was considered to be an element of continuity of the real political power of Vargas. The climate was therefore favourable both for discussion on the medium and long-term future of the Brazilian economy and for intense disputes between liberalism and developmentalism.

Indeed, as far as the evolution of economic thinking was concerned, these years of transition were very special, marking the beginning of a broad public debate in Brazilian society on all the basic questions of the country's economic development. This was a "doctrinaire" period *par excellence*, in which economic liberalism, fed by expectations of the normalization of international trade, confronted the young developmentalist ideology in a dispute over the ideological orientation of the "Brazilian economic order", in which finally there were no clear victors.

Historians interested in recording the climate of economic liberalism of that period will surely not be short of material. In line with the liberalism of the economic policy which was applied (involving in general the softening or elimination of the mechanisms for State control over external trade and economic activities), numerous analyses and expressions of support are to be found in the economic literature of the period.

However, the liberalizing climate is only half the story of economic thinking in the early post-war years. The other half consists of the story of how the developmentalist ideology which had originated in the preceding period resisted this climate and endured, without yielding any ground, the acid test of the ideological mingling of political and economic liberalism which was favoured by the prevailing circumstances.

The very need to resist demanded an effort of organization of ideas which represented an advance for the developmentalist position. Perhaps the best example of this was the famous controversy between the liberal Eugenio Gudin and the pioneer of developmentalism, Roberto Simonsen, which took place in 1944 (Simonsen, 1977). Although the first-named of these contestants was better prepared analytically, and although there is no point in trying to decide who "won" the debate, it can be asserted that the efforts of Simonsen were

themselves responsible for the first basically complete and organized statement of the developmentalist position. The intensification of the debate and the increase in the number of channels of intellectual expression in the following years mean that this period may be considered as a turning point in the developmentalist ideological cycle, or more exactly as the beginning of the maturity of the ideas of that current.

b) *The second stage: the maturity of developmentalism in a favourable historical context (1948-1952)*

When dealing with the decade following the Second World War, students of Brazilian history usually subdivide this period according to the successive governments (1946-1950, President Dutra; 1951-1954, second government of Vargas, and 1954-1955, government of President Café Filho and provisional governments which followed his exit).

From the point of view which interests us here, however: that is to say, describing the process of maturity of developmentalism in the economic literature, some changes may usefully be made in this subdivision. Firstly, it is necessary to highlight the years of political transition following the war, as we already did in the previous section. Moreover, there is some justification for dividing up the years from then until 1956 (the year when the Kubitschek administration began) in a more heterodox manner, considering separately the years from 1948 to 1952 on the one hand, and the three-year period 1953-1955 on the other.

There were indeed many elements of continuity in the period 1948-1952, beginning with what happened in the economic and political fields. With regard to the first of these, there was rapid growth and relative monetary and exchange rate stability between two difficult years (in 1947 there was a relative contraction in economic activity and an exchange crisis, and in 1953 there was a monetary and exchange crisis, as well as a crisis in agriculture). There was also an improvement in the terms of trade, which made it possible to satisfy the growing needs for imports.

In the political field, a conservative power pact came into effect which had been established in 1947 (a year of change from the democratic liberalism of the immediate post-war period, with the outlawing of the Communist

Party and political repression) between the Social Democratic Party (PSD), the party of President Dutra, and the National Democratic Union (UDN), the main opposition party (Fiori, 1984). Vargas tried to respect this pact at the beginning of his administration, and succeeded in securing a certain degree of political stability in 1951 and 1952. Populism, which was the tactic he used to support his policies independently of the conservative elites, was only to become a factor of destabilization from 1953 onwards.

Brazilian economic thinking in the period 1948-1952 differed from that of the three-year period immediately preceding it because on the one hand it did not reflect the reorganizations and rearrangements in the power structure which were characteristic of the post-war transition, and also because it did not reflect as intensively the uncertainties, hopes and perplexity connected with the basic problem of that time: the normalization of the economy in times of peace. On the other hand, it also differed from the three-year period immediately following it because of the prevailing economic and political stability, which was not to be a feature of the years 1953-1955.

In the following sections, some historical elements which contributed to the maturity of developmentalism in the period in question are highlighted:

i) In 1947 there was a sharp reversal in the expectations that the machinery of international trade would soon be normalized (non-convertibility of the pound sterling, proliferation of bilateral treaties, etc.). This fact became particularly clear when the country had to face an unexpected exchange crisis. At that moment, Brazilian external trade policy once again underwent heavy State intervention, causing frustration to the liberals but being interpreted by the developmentalists as support for their proposals.

ii) An important element in this period was the concern to replace the stock of machinery (*reaparelhamento econômico*, in the rather curious expression originally used in Portuguese). Since the last years of the war, this expression referred to the need to expand the replacement of producer goods in the Brazilian economy. This concern was important for the maturity of developmentalism, because it naturally led to reflections on economic planning and industrialization. The debate on these

issues was further intensified after the frustration of the expectations of using the foreign exchange reserves accumulated during the war to import capital goods for industry and the infrastructure. In addition, there were other elements, such as the criticisms that the Marshall Plan was simply going to leave out Latin America, the negotiations with the United States on special treatment for Brazil in exchange for unrestricted political alignment (in the context of the Cold War), and the growing fear of a third world war (which it was felt would take the Brazilian economy by surprise and find it unprepared for such a situation). The debate on *reaparelhamento* culminated, on the one hand, in massive imports in 1951 and 1952 and the establishment of the Brazil-United States Joint Commission (a body for planning major investments) in 1951 and of the BNDE in 1952, while on the other hand the election of Eisenhower represented a clear interruption of any expectations of obtaining major support from the United States for basic investments in the country.

iii) This period was intensely nationalist, because of the campaign for the nationalization of the petroleum industry. The decision on this issue was taken by Parliament in 1952 with the creation of PETROBRAS, followed by a natural retraction in nationalist ideology.

iv) Finally, there was an important linking element between the liberalism of the Dutra administration and the developmentalist current of the Vargas administration: the economic ideology of the latter, which originated in the 1930s, was strengthened during the Dutra administration with an intensive process of criticism of the passivity and liberalism of the latter government. Up to a certain point, the conscious developmentalism of the Vargas administration was a direct result of the frustrations caused by the Dutra administration to those who advocated a policy of industrialization for the country.

In this favourable climate, the economic literature gradually began to reflect the relative strengthening of the developmentalist view. To the right of this, in rather a timid manner, the liberals witnessed a form of evolution of events which ran counter to their principles: they tried to explain that the tendency of the international system was towards the recovery of equilibrium, and they concentrated their attention on the problem of

monetary stability. To the left of the developmentalists, the socialists divorced themselves from the national situation under the impulse of the radicalization of the Communist Party's political tactics due to the repression suffered by it. The participation by the socialists in the intellectual life of this period was restricted almost entirely to the campaign for the nationalization of the petroleum industry, the debates on which they followed closely, especially through their military sympathizers and the *Revista do Clube Militar*.

In this period, developmentalist ideas gained wide currency in the economic literature. For example, the National Confederation of Industry began in 1950 to publish the magazine *Estudos Econômicos*, the first issues of which (1950 and 1951) are of considerable historical value, since they contain, among other important documents, a summary of the ECLAC *Economic Survey of Latin America, 1949* and a preliminary version of the famous text by Raúl Prebisch, "Theoretical and Practical Problems of Economic Growth".

In 1947, the Getúlio Vargas Foundation began publication of the review *Conjuntura Econômica*, headed by a team of developmentalist economists. A little later, publication of the *Revista Brasileira de Economia* began, with a team of neo-liberals directed by Eugenio Gudín and Octávio Gouveia de Bulhões. In spite of its own theoretical and ideological leanings, this latter publication also included articles of different tendencies, including the "Economic Manifesto" of Prebisch (in September 1949, before its publication in ECLAC, 1950); the Introduction to the *Economic Survey of Latin America, 1949* (ECLAC, 1951), and the text by Hans Singer (1950) on the deterioration of the terms of trade.

The publication of the first theoretical papers by ECLAC made a dual contribution to the maturity of developmentalism. Firstly, because the ECLAC texts gave a boost to the developmentalist ideology: they were nothing less than signed declarations by a United Nations body which not only asserted that a vigorous process of industrialization was underway in the continent, but which also considered it a new stage in the history of mankind. And, secondly, because they gave the defenders of State planning and support for industrialization a whole new set of arguments built on analytical bases which were far superior to those used hitherto.

c) *The third stage: the resurgence of liberal ideas and the reassertion of developmentalism*

The period from 1953 to 1955 was one of marked political instability. From 1953 onwards there was increasing opposition to Vargas from various sectors of the Brazilian civil and military élite. The crisis culminated in the suicide of the President in August 1954, but the instability continued, jeopardizing and almost preventing the assumption of office by President Juscelino Kubitschek, elected at the end of 1955.

As is usually acknowledged in Brazilian historiography, this was an essentially political crisis. This does not mean, however, that there were not also elements which disturbed the economic situation. An exchange crisis in 1953 and 1954, and above all the upward trend of inflation in those years, heightened the general climate of political instability and provided the opponents of Vargas with telling arguments.

Indeed, the opposition took advantage of the situation to exaggerate the seriousness of the economic problems, thereby strengthening the perception of the public that the country was in the midst of an economic crisis and fomenting the idea that the Vargas administration was responsible for this because of its "interventionist" and "inflationary" nature.

The context was consequently very favourable for a liberal counter-attack on developmentalist ideas, and in fact this was clearly to be observed. The developmentalists carefully analysed the attacks of the liberals and reacted with a reassertion of their fundamental principles. Perhaps the most important feature of this interesting dispute in the field of ideas was that it brought out the fact that the formulation and acceptance of the industrialization strategy had matured considerably in the country.

At that moment, in contrast with previous periods, what was being discussed was not the validity of an economic policy of support for industrialization, but the degree of intensity of State intervention and the rate at which urban-industrial development should be carried out. This debate split up the discussions on the permissible degree of tolerance of the monetary and exchange imbalances generated by the process under way and on the relationship between State intervention, the

correction of the imbalances, and the continuity of development.

The views of Eugenio Gudín, for example, continued to have validity and force when the neoliberal leader spoke of reducing State intervention or achieving monetary stabilization, but they began to seem out of date when he insisted in questioning the very possibilities of industrialization. This type of talk represented less and less of a threat to the developmentalist project. Furthermore, the ideas put forward in opposition to the project were promptly refuted in a manner which was often further strengthened by the analytical instruments contributed by ECLAC.

The period 1953-1955 may be considered as an advanced phase in the process of maturity of the developmentalist project, since in this period the range of institutions engaged in intellectual production was renovated and expanded. This meant a big advance towards greater awareness of the importance of the political struggle in the intellectual field.

The five great currents of thought referred to in the first part of this article –the neoliberal current, the three developmentalist ones, and the socialist current– were very clearly located in their respective institutions.

The neoliberals gained complete domination over the Getúlio Vargas Foundation with the exit of the developmentalists from control of the review *Conjuntura Econômica*; they also controlled the reviews of the National Economic Council and the National Confederation of Trade. The non-nationalist developmentalists –less numerous, but maintaining active intellectual participation– made up the Brazil-United States Joint Commission and also had influence in the BNDE. The nationalist developmentalists set up two important institutions: the Higher Institute of Brazilian Studies (ISEB) and the *Clube dos Economistas*, the latter being initially formed on the basis of a nucleus from BNDE, under the leadership of Celso Furtado (who had moved from Santiago, Chile, to Rio de Janeiro in order to work in the ECLAC-BNDE Joint Commission on a project on economic planning in Brazil. The private sector developmentalists –who were less important in this phase– continued to publish the review *Estudos Econômicos* in the National Confederation of Industry, and finally the socialists, grouped together in the Brazilian Communist

Party, once again stepped up their participation in the intellectual life of the country after the death of Vargas (the important review *Revista Brasileira*, for example, appeared for the first time in 1955).

3. The heyday of developmentalism: 1956-1960

The Kubitschek administration (1956-1960) combined relative political stability with rapid economic and industrial growth and clearly reflected a developmentalist strategy. Already in his Presidential campaign in 1955, Kubitschek had announced that in his mandate he would achieve "fifty years of progress in five". In the early days of his administration he set up the *Conselho Nacional de Desenvolvimento*, which formulated and followed up the implementation of what is considered to be the most important planning instrument in the history of the country, namely, the *Plan de Metas*. In 1956 the situation of perplexity and vagueness over the economic courses to be followed, which had affected the country in previous years as a result of the political crisis, had already been overcome. The developmentalist ideology was now incorporated into the official policy statements of the government.

The economic literature very clearly expresses the perception that the intellectual elites of the country had of these changes. The developmentalist economic thinking, which had matured in the previous ten years, now entered its heyday. In other words:

i) The planned industrialization project was widely disseminated in the economic literature and also gained the upper hand over the neoliberal school of thought. Although the latter did try to return to the attack, it had been weakened by historical circumstances and was now on the defensive. The school of thought which was to pass over to the offensive was the socialist school, which helped in this period to disseminate certain elements (regarding nationalism and questions of distribution) which were to be of great importance later on in the crisis of developmentalism.

ii) Economic reflection, which had been strongly influenced in previous years by the debate on monetary stabilization and the need for equilibrium in the balance of payments, came to be totally subordinated to the discussion of the question of economic development. In brief, what domi-

nated the discussions at this time was the proposal to intensify the industrialization process by planning it, expanding the infrastructure of goods and services, guaranteeing the necessary imports, and avoiding contractionary anti-inflation policies.

This was a particularly opportune moment for the use of the structuralist arguments on external imbalance and inflation. The ECLAC analysis of the structural causes of balance-of-payments problems had already been used for a number of years, and it continued to be an important instrument against the arguments of the IMF that it was necessary to grow in a "balanced" manner and to adjust the growth rate of the economy to this principle.

The structuralist theory regarding the causes of inflation – a theory which arose around that time within ECLAC (Vásquez, 1956; Sunkel, 1958 and Pinto, 1957) – was very widely used and disseminated by the economists of the nationalist developmentalist current. Those were the years when the structuralists energetically defended the need for some tolerance of inflation. Obviously, the idea that inflation is a phenomenon which is inevitably associated with industrialization in countries with a poorly diversified structure fitted in perfectly with the arguments against the political pressures for the application of severe measures to control inflation (in contrast with Argentina, where the IMF imposed a stabilization programme, the Kubitschek administration broke with the IMF in 1959, which shows how favourable the Brazilian historical context of that time was for the dissemination of structuralist ideas).

4. The crisis of developmentalism

Between 1961 and the military coup in 1964, there was great political instability in the country, unprecedented mobilization in favour of social reforms, serious monetary, financial and exchange difficulties, and (as from 1962 but above all in 1963) pronounced declines in the growth rates of the product and employment.

As a reflection of this new situation, of the higher degree of politicization reached by society and – no less important – the fact that industrialization was already basically consolidated (or that the industrialization ideology had ceased to have any novelty appeal), the developmentalist school of thought entered into crisis.

The industrialization project, which until a few years before had been increasingly guiding the thinking of Brazilian economists, ceased to act as the ideological backbone of economic proposals and analyses (as was occurring all over Latin America, and especially in the thinking of ECLAC).

The crisis in developmentalist economic thinking may be summed up as follows:

i) Economic reflection was subordinated primarily to two aspects: the structural problems of inflation and the balance of payments, and the "basic reforms". In particular, the question of social reforms—especially in agrarian matters—became for the first time a basic element in the economic debate, as part of an appraisal of previous experience and of the future development possibilities of the economy.

ii) There was thus an interesting combination between the emphasis on short-term problems, typical of a current crisis, and the emphasis on the more general problem of the introduction of basic changes in the growth pattern, typical of a structural crisis. The latter feature was further heightened by an ideological element which returned once again to the Brazilian scene: economic nationalism, which, by stimulating the debate on the economic and political assertion of the nation, also helped to stimulate discussion on the changes in the course followed by the Brazilian economy.

iii) Obviously, the new agenda left much less space available for the developmentalist concerns of the past, such as the planning of industrial investments.

iv) What was now involved was a test of a new style of developmentalism, profoundly changed, less optimistic, and wrapped up in "reformist" campaigns. There was more widespread currency of the notion that continuity of development was difficult, if not impossible, within the existing institutional structures. There were various aspects which contributed to this. Firstly, it was felt that there was a lack of a financial equation which would permit growth without serious fiscal and monetary imbalances, and this would call for far-reaching fiscal and financial reforms; indeed, there was even a reasonable degree of consensus that the Brazilian State was not prepared financially for coping with the demands that the country imposed on it. Secondly, it was asserted that unless there were reforms in agrarian structure and a change in

income distribution, industrial development would not be able to solve the problems of unemployment and poverty of the majority of the population and of extensive regions of the country; the 1963 recession further accentuated this pessimism and helped to undermine the traditional developmentalist outlook. Thirdly, the country was beginning to take account of the theory, recently introduced into Latin America, that institutional reforms in income distribution were not only necessary as a question of social justice, but were also essential in order to recover the growth capacity of the economies: in other words, the ECLAC analyses on the tendency to stagnation, incorporated in reformist proposals, were already beginning to circulate in the country.

In this final phase of the developmentalist ideological cycle, the concepts we used earlier to define the various currents of economic thinking began to lose validity. At that time, the analytical category which permitted us to organize this history of economic thinking in the 1930s, 1940s and 1950s—that is to say, the concept of "developmentalism"—began to lose its capacity to explain the ideas of the economists.

The problem which arose in the early 1960s was no longer that of defending or attacking the strategy of creating an industrial economy, since the irreversible nature of this was perceived by all. What was now involved was the need to define the goal towards which the Brazilian industrial economy should lead, since it had started off with serious distortions, especially in the social field. Faced with this thematic redefinition, the economists regrouped themselves in accordance with political and ideological considerations which had not existed in the past.

Thus, for example, the "right" of the political spectrum: the neoliberals and the non-nationalist developmentalists—and to some extent also the private sector developmentalists—began with a few exceptions to think and sometimes even to work together. The best example of such fusion was perhaps that of the "partnership" between Bulhões and Campos, respectively ministers of finance and of planning in the first military government (1964-1967), while the best example of separation was perhaps that of the split-up of the Brazilian left, which spread out over a multitude of tendencies and organizations.

III

Final reflections

This final section of the article has been reserved for some considerations of a subjective and speculative nature.

The first of these concerns the quality of the objective of this study: has the intellectual production in the field of economics contributed to the development of the country? The answer would appear to be fully affirmative. The economic debate appears to have fulfilled its fundamental social function by permitting the heightening and spread of critical analysis of the economic and social problems of the country, thus improving the quality of the decision-making process and rendering it more democratic. The intensity attained by the debate among economists and the clarity with which the political and intellectual elites came to understand the process under way are undoubtedly impressive.

On the other hand, it is not surprising that the question of social reforms was only incorporated into the debate in the 1960s. From the very beginning of this research study, when he was still seeking the foundations of developmentalist thinking, the author suspected that society in the developmentalist era was not politically prepared for the spread of an ideology advocating an alternative (reformist) type of capitalism.

This initial impression grew stronger in the course of the study: it would appear that, in view of the features of the political and social structure of that time – the institutional framework, structures of property and domination, etc. – the only forward-looking project that could be asserted historically was that of industrialization pure and simple. This is why the only political group which defended the

introduction of reforms ever since the 1930s – i.e., the Brazilian Communist Party – only exerted any substantial ideological influence, before the 1960s, during its fleeting period of legality immediately after the war.

As already noted, during the crisis of developmentalism – in the early 1960s – the first analytical formulations began to appear which advocated a form of capitalism with greater social justice and better distribution of income and property. It could be said, as a final speculation, that the military coup aborted what might well have been a slow but steady process of social progress, and at the same time it aborted what might have been its ideological counterpart at the level of economic thinking: i.e., a new cycle of the “developmentalist-reformist” type.

It is possible that historians specializing in the economic ideas of the phase which came after 1964 may identify as the hub of the Brazilian economic debate an ideology based on the “heightening of capitalism” without major social concerns, despite the attacks of an intelligentsia which, although having progressive ideas, had only limited ideological influence. They may perhaps also conclude that, with the re-democratization of Brazilian society in the 1980s, the reason why the reformist approach is not a central feature of the economic debate today is that the country is currently experiencing an acute economic crisis.

It is to be hoped that the historical conditions needed for the resumption of the hypothetical reformist ideological cycle will not be long in coming.

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