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Center for Latin American Development Studies

TOWARDS A CHANGE IN THE ECONOMIC PARADIGM
THROUGH THE EXPERIENCE OF
DEVELOPING COUNTRIES

by

Marcelo Diamond

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Discussion Paper Series
Number 24 February 1977

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Introduction

The economic problems which appeared during the last years in the industrial world defy current economic thought. According to the established theory, governments can and should preserve full employment of productive capacity regulating global demand by monetary and fiscal policies, without inflationary consequences as long as this demand does not exceed full employment level. Yet our times are characterized by the reappearance of intense unemployment periods, jointly with virulent inflation - contradictory phenomena against which governments seem to be powerless.

Those who are acquainted with the problems of developing countries readily perceive their close similarity with these new maladies of the industrial world. The central thesis of this paper is that in both cases the disturbances originate in bottlenecks, phenomena as yet not integrated into the established economic thought. The objective of this analysis is to make a contribution to this integration, using as a starting point the experience of developing countries.

The paper is divided into three sections. The first deals with the causes of the frequent lag of economic ideas vis-a-vis reality. It specially analyzes the present confusion caused by the new type of recessive inflation that appears when the forces of the market, which tend to neutralize the bottlenecks, provoke a regressive distribution of income and clash with the social pressure arisen in support of real wages. The second section deals specifically with the problems of primary-exporting countries in process of industrialization, with their chronic trend towards external bottlenecks and the resulting phenomena, such as chronic and cumulative foreign indebtedness, recurrent stop-and-go cycles and conflicts about distribution of income which are solved through the aforementioned recessive inflation. On the grounds of this analysis an economic policy is outlined with a view to making external equilibrium compatible with a reasonable distribution of income and

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with full employment. The blocking role of the prevailing paradigm is also analyzed. Finally, the third section applies these concepts to the world-wide inflation since 1972, the present oil crisis and to the new phenomenon of stop-and-go inflationary-recessive cycles, this time at a worldwide level. (1)

Note: (1) The analysis of the bottlenecks, of their origin, effects and implications in primary-exporting countries in process of industrialization contained herein is the result of more than ten years' work, reflected in subsequent articles and publications, and summed up in the book entitled "Doctrinas Económicas, Desarrollo e Independencia" (Economic Doctrines, Development and Independence). See M. Diamand, 1962; 1963; 1968a; 1968b; 1969; 1970; 1971a; 1971b; 1971c; 1971d; 1972a; 1972b; 1973; and C.A.R.T.A.

In the present case I have tried to attain three simultaneous objectives: to give an abridged version of the above analysis, to place special emphasis on the conflict between market forces and the income distribution created by the bottlenecks, and to provide a conceptual frame for the analysis of the present international crisis. This last comparative approach originated in two seminars given by me in 1975 at Boston University, during my stay at the Center for Latin American Development Studies, as a visiting professor of economics. In this respect, it was particularly enriching to be able to have a broad exchange of ideas with Professors Christopher Clague, Gustav Papanek, Paul Rosenstein Rodan and Daniel Schydlowsky. Independently from this, the final version of the paper benefited from the valuable comments and suggestions of Carlos Carballo, Raúl Cuello, Juan Carlos De Pablo, Carlos Díaz Alejandro, Abraham Stein and, again, Daniel Schydlowsky. Of course, all errors and deficiencies are of my own exclusive responsibility.

I - BOTTLENECKS AND INFLATION

1) The three universes of economics

A bottleneck may be defined as the insufficiency of an item not very significant in terms of its own value but essential for the carrying out of an activity of a much greater value. (1) In macroeconomics, the main bottleneck appears when a country lacks the foreign exchange required to maintain its productive capacity fully employed. If the problem is not solved, domestic production is forced to diminish in a magnitude several times greater than the original insufficiency of foreign exchange. This phenomenon will hereafter be called external bottleneck.

Similar bottlenecks appear when some raw materials or other essential goods - for example, petrochemicals, chemicals, steel, food-stuffs, etc. - are in short supply. This phenomenon will be called productive bottleneck.

Prevailing economic thought accepts two kinds of limitation to production. The main and permanent one is given by global productive capacity, fully employed. The second and circumstantial limitation, responsible for the occasional under-utilization of this productive capacity, appears as a result of the insufficiency of demand. On the basis of the first kind of limitation the whole classical theory is built, with its own analytical pattern and all the priorities of "conventional wisdom": saving, efficiency, balanced budget and free enterprise. On the premise of the limitation by demand rests the Keynesian model, with its diametrically opposed system of analysis and priorities: stimuli to expenses and consumption, unbalanced budget and deliberate state intervention in favor of full employment. The synthesis of the two models makes up what we could call the traditional paradigm of economy.

The phenomenon which we are analyzing creates a third universe in which production is also restricted below full employment, but because of the insufficiency of an essential input. This third type of limitation gives place to another analytical framework with a set of priorities emerging from the need to solve the bottleneck and as different to the other two sets as they are different to each other. (2)

Note: (1) Which presupposes a production function of (approximately) fixed coefficients, at least in the short run.

Note: (2) See M. Diamond (1971a).

However, the evolution and the diffusion of this analytical model is blocked. The bottlenecks, although accepted, described and analyzed in their partial aspects in literature and, in the specific case of external bottlenecks, thoroughly dealt with in numerous treatises on the international monetary system, are not incorporated into economic thought as a legitimate limitation on the basis of which a new analytical framework should be developed. They are rather denounced as a pathological phenomenon, which appears as a consequence of erroneous economic policies. That is why economic theory, even when applied to bottlenecked economies, operates as if this crucial limitation did not exist, with the consequent impossibility to understand reality.

2) The paradigms and "pathological" reality

In the past, the progress of economic science has very often been held back by considering certain crucial phenomena as "pathological" ones. This topic is closely related to the work of Thomas Kuhn. In his book "The Structure of Scientific Revolution", Kuhn challenges the idealized image of pure science, faithful to truth and permanently ready to modify its theoretical structures in response to new facts. On the basis of broad historical evidence, coming from the field of exact sciences, he shows that scientific theories, once imposed and accepted at the level of textbooks, become rigid paradigms, that is, consistent intellectual structures, which predetermine the view of reality. In providing a predigested analytical framework, these structures play an important role in the diffusion of scientific knowledge, since they avoid the need to start from the basic premises and to re-elaborate, when faced with every new fact, the whole deductive framework.

The weakness of these structures is that in time they tend to acquire a life of their own, becoming very resistant to change. When new facts threaten to invalidate the premises on which they are based, these facts tend to be disregarded and rejected. The usual getaway is to attribute them to errors in observation. Only when discrepancies multiply and the gap between theory and reality exceeds a certain critical magnitude, does a scientific revolution take place giving birth to a new paradigm.

In order to apply these ideas to economic science, one must distinguish between the general equilibrium model and the specific models. The first one provides a wide formal context of variables, parameters and relationships which, through a proper quantification of the parameters and the introduction of adequate time lags, can be adjusted to any reality.

But because of this selfsame broadness, the model, so as to be applicable, must be simplified. That is why in practice economists work with specific models, based on a certain selection of variables and on certain parameters which are believed to correspond to reality at a given moment. Although from the methodological point of view these models are nothing more than specific cases of the model of general equilibrium, they determine the interpretation of everyday reality by the economists as well as the measures advocated by them. In consequence, these specific models - and not the general equilibrium model - are the equivalent of Kuhn's paradigms.

Their history not only confirms Kuhn's thesis but also shows much sharper discrepancies between theory and reality than in exact sciences. In the latter, discrepancies arise as a result of advances in knowledge, when new facts which "do not fit" into the theory come to light. In economics, in addition to all this, reality itself is in a state of permanent change. This applies to variables, parameters, time lags, social values, political restrictions - summarizing, to all the factors which determine the construction of specific models. This is why models which are valid in a certain country are not necessarily applicable in others and why models that were valid yesterday are not necessarily applicable today. Because of this continuous change in space and time economics should be endowed with a particular capacity to change.

Many economists, as individuals, have this capacity and are able to respond with new elaborations to changes in reality. But economic science, as an institutionalized body of knowledge, is extremely rigid. To the simple resistance, common to all sciences, to recognize new facts which could invalidate the theory, it adds its own denial of reality mechanism.

Economics, apart from being an analytical discipline, is also a normative one; it not only describes the world just as it is, but it also postulates - often implicitly - how it should presumably be. Thus, in its origin, it postulates free international trade, without protection; freedom of exchange; a competitive market, without monopolies, oligopolies or state intervention; wages flexible in the upward and downward directions, without union or government controls; interest rates set by the market, etc.

These assumptions, which in the last century constituted a reasonable approximation to the facts, gradually ceased to reflect reality. Nevertheless, the theoretical framework was not reviewed. The economists developed instead a rationalizing procedure based on the expression "should not". Thus, governments should not meddle with the economy; unions should not have the power they have; workers should not resist cuts in their wages; protection or interference

with foreign trade should not exist, etc. If any of these things does happen, obviously the blame is to be put not on the model but on the "pathological" nature of reality itself. The models are valid "a priori" and politicians should remove bothersome facts in order to adjust reality to theory. (1)

By means of periodical revolutions in thought the models end up by adjusting to reality, but always with considerable delay. This adjustment does not occur when new facts, which invalidate the previous model, are discovered. The facts that do not fit into the theory have usually been known for decades and have simply not been taken into account, being considered "pathological" by established thought. Their incorporation into the models takes place when the gap between theory and reality becomes sufficiently wide, when it has lasted for a sufficient length of time and when it occurs in sufficient geographical proximity to the main idea-elaborating centers. In such a case, the political pressure that the environment exerts upon the academic community makes it impossible to ignore reality any longer. In other words, scientific revolution in economics occurs when certain new facts, already known to everybody for a long time but presumably pathological, are finally accepted as legitimate.

The most remarkable case of this resistance to accept new facts was the refusal to admit, for more than a hundred years, the phenomenon of unemployment. Economic thought insisted on the validity of Say's law according to which all supply should generate its own demand, making involuntary unemployment impossible. Economic crises were there to be seen by everybody and were the cause of grave concern to practical people; policies revolved around them and they even led to wars for the conquest of markets. But the drops in the level of employment were attributed to interferences with the market, especially to the resistance of wage earners to accept cuts in their wages. In view of this "pathological" phenomenon, economic thought refused to admit the legitimacy of unemployment. Thus, the analyses, forecasts and statements made amidst the crisis were based on the premise of full employment and made no sense at all.

Note: (1) Starting from the famous fraud of a biologist whose theory called for the appearance of stains on mice and who was discovered while painting them, Barbara Bergman describes the different ways of "painting the mouse" in economy, through a selection of statistical data. The mechanism of "pathological" reality goes even farther, since because of its hypnotical influence everybody starts seeing nonexistent stains. (See Bergman B.)

This blind spot in perception was only removed by the Keynesian revolution which introduced the concept of demand insufficiency as a limiting factor of economic activity, thus leading to a model with a behavior diametrically opposed to the classical one. This revolution was not a result of the sudden discovery of unemployment. The new fact was the legitimization of unemployment and its incorporation into established theory. Its main basis, in turn, was the legitimization of the downward rigidity of nominal wages and prices.

Something similar happened in recent times with the analysis of inflation. Originally, the only known and accepted price formation mechanism was the law of supply and demand; the only recognized cause of inflation was excess demand and its only remedy was demand contraction. In other words, all inflationary phenomena were identified with demand inflation. It was known that wages and monopolistic prices were set by decision-making mechanisms, independent of the market. But these facts were "illegitimate" and did not have any room in economic thought. It was only in recent decades that the incongruence of the analyses which claimed to explain recessive inflations on the basis of excess demand forced economics to gradually, though unwillingly, accept price increases originating in decisions adopted by the unions and big corporations and relatively independent of the market, thus legitimizing cost-push inflation. (1)

3) The bottlenecks and the economic thought

Reality evolves more rapidly than ideas. Despite the fact that at a theoretical level cost-push inflation has not yet been fully accepted, there already appeared a new type of recessive inflation, much more virulent, originated in bottlenecks.

The phenomenon of bottlenecks never came to be recognized by institutionalized economic theory (2), since this theory is based on

Note: (1) Important contributions to spread the analysis of this type of inflation, which at present is also known as "administrative inflation", were made by Galbraith. The Argentine case is thoroughly analyzed by Moyano Llerena. See Galbraith, J.K. (1976) and Moyano Llerena, C.

Note: (2) Individually, there are very important elaborations in this respect, for example by the ECLA school. The inflationary derivations can be seen in Olivera, J.H.

an "a priori" premise according to which bottlenecks cannot exist. It is assumed that, if market forces are allowed to operate freely, the rise in the prices of scarce items reduces demand and boosts supply, thus re-establishing equilibrium. Actual bottlenecks are viewed, then, as pathological phenomena which demonstrate previous interferences with market forces.

Nevertheless, in the specific field of external bottlenecks, ideas have undergone an important evolution. Up to World War I the international balance of payments rested upon the gold standard. By tying up monetary circulation indissolubly with gold reserves, the gold standard transformed external deficits into loss of gold and into the reduction of monetary liquidity and of demand. According to the theory in vogue, nominal domestic prices and nominal wages had to decline, thus stimulating, by means of this price effect, exports and the substitution of imports by domestic production.

In practice, however, nominal prices and wages were rigid downward. The fall in demand led to recession and to the under-utilization of productive capacity. Imports decreased, not as a result of greater incentives to local production, but because of the fall in consumption and in income that led to the drop of imports of finished products, raw materials for local production and capital goods. Something similar happened to exports: eventual stimuli, if any, owed their existence more to the pressure exerted by excess production, which did not find domestic demand, than to greater price incentive. In other words, the price effect was in practice replaced by the income effect, based on recession and on the drop of global production to the level of the external bottleneck.

The phenomenon was ignored for two reasons. At the theoretical level, as the existence of unemployment was not accepted, neither could a balancing mechanism based on it be recognized. From a practical point of view, the recessive effects of the gold standard were palliated by compensatory capital movements, induced by the mechanism of the gold standard itself, since tight money caused interest rates to climb and attracted loans and investments from abroad. The remedy was particularly efficient for great industrialized countries in which the banks, by means of deliberate maneuvers with interest rates, often "helped" the market, accentuating the compensation and "exporting" unemployment to peripheral countries. (1)

Note: (1) Due to this "help" to the market the whole system worked well in temporary disequilibria but not in permanent ones, in which it rather served to disguise the deficits, giving rise to stop-and-go cycles, the antecedents of present ones. See Triffin, R.; Avramovic, D.

The collapse of free trade and of the free circulation of capital between the two world wars, on the one hand, and the new values of full employment brought about by the Keynesian revolution, on the other, led to a new design of the international payments system. The result was the gold-exchange standard, adopted in Bretton Woods in 1944, which accepts the rigidity of nominal domestic prices and wages as a legitimate fact of life and foresees their adjustment to world prices through devaluations and revaluations of the respective national currencies.

Once these touch-ups have been made, faith in the balancing capacity of market mechanisms vis-a-vis external bottlenecks was reborn, a capacity which had not even come to be questioned regarding productive bottlenecks.

4) "Bottleneck" or structural inflation (1)

The belief in the balancing capacity of market forces is based on two non-realistic and implicitly assumed premises. Any balancing action on bottlenecks, whether external or productive, implies changes in relative prices which entail transfers of income in favor of the suppliers of scarce items, to the detriment of the rest of the community, mainly of the wage earners. This restriction is not taken into account by economic thought, according to which real wages are not an objective but an equilibrating variable to be adjusted according to market forces. If the market, in order to reallocate resources, forces a new and more regressive distribution of income, then the latter becomes as per definition the correct one and the previous distribution turns out to have been wrong. The first implicit premise supporting the belief in the balancing action of the market is that this regressive redistribution of income is always acceptable to society. (2)

Note: (1) See Diamand, M. (1971c).

Note: (2) We should distinguish again between some economists and institutionalized economic science. For example, in 1956 Meade analyzed the Australian model setting as an explicit goal the attainment of compatibility between external equilibrium and income distribution in a way most relevant to Argentina. But the resistance of the institutionalized paradigm prevented the diffusion of the model so that it arrived in Buenos Aires with some ten years' delay and by chance. See Meade, J.E. Much earlier and from a more general point of view, the conflict external equilibrium-wages can be seen in Kalecky, M.

In fact, in the real world, any attempt to diminish real wages runs into great resistance. The social pressure which always appears in support of higher real wages becomes multiplied in intensity when it means opposing measures designed to lower them. Psychologically, the level once achieved by real wages becomes a "normal" standard of reference and its reduction is felt as an attempt against acquired rights. Therefore, while economic thought treats real wages as an equilibrating variable to be adjusted according to the forces of the market, to modern society their preservation is a fundamental objective.

Once a regressive redistribution of income has taken place, society will sooner or later react via an increase in nominal wages, annulling in this process the alteration of relative prices imposed by the bottleneck. But if the bottleneck persists, once again it will gain the upper hand by means of a new rise in the price of the scarce item, that will propagate to the rest of the system. A new turn of the inflationary spiral will thus be initiated, in a race between the price of the scarce item and the purchasing power of wages.

The second implicit premise supporting the belief in the balancing action of the market, which also frequently collides with reality, is that the adjustment is sufficiently effective so as to avoid unemployment. The balancing action via prices has a recessive effect by itself. A brusque regressive redistribution of income always leads to a fall in demand, since the sectors with the highest propensity to consume are those which lose part of their income. This unemployment could be partially compensated by monetary expansion and greater fiscal spending. But there exists an intrinsic need for recession.

Even when society is ready to accept a fall in real wages as a balancing mechanism, this mechanism - as we shall see - does not always work and, if it does work, it is not effective in the short run. In the external sector, exports do not rise overnight and creation of the new import-substituting capacity takes time. The same happens to the investments required to overcome productive bottlenecks. This delay in the response can be overcome if there is assistance from abroad: foreign capital to provide lacking foreign exchange and physical goods which can be imported in order to eliminate productive bottlenecks. When this possibility becomes exhausted - which, as we shall see elsewhere in this paper, occurs in developing countries and - after 1973 - also in industrialized countries, the only balancing mechanism left is the recessive one: a fall in the production which utilizes the scarce input to the point in which it becomes adjusted to the level of the existing bottleneck.

This fall arises as a result of a slump in demand, provoked by the governments. At times, the governmental measures take an active form. But, more often, the procedure is a passive one: the governments abstain from expanding the means of payment in step with price increases, create monetary illiquidity and thus reduce demand, adding this demand reduction to the recessive effect already originated in the regressive redistribution of income. Thus the presumably disappeared pre-Keynesian recessive tool is reborn. The difference from the gold standard proper lies in that, instead of a nominal monetary restriction, here we have a monetary restriction in real terms. Its origin is the rise in the price of the scarce good which, after spreading to the other prices, collides with a monetary ceiling strictly maintained by the governments.

Thus, in a bottlenecked economy, the balancing action of the market has a regressive effect on employment. Consequently, the social pressures which strive to annul this action have double motivation: one is to attain the recovery of the purchasing power of wages and the other to reactivate the economy. Inversely, when these pressures achieve their goals, they simultaneously annul the incentivating price effect and the recessive effect. Since both effects are necessary to level supply and demand - in the long and in the short term, respectively - when they disappear, a new rise in prices becomes inevitable and the whole cycle starts all over again. The struggle between the regressive and recessive effects of the market mechanism in a bottlenecked economy and the political and social pressures which strive to annul them lead to the phenomenon - already remarked upon - of recessive inflation, which exploded throughout the world in the last years.

Essentially, this structural or "bottleneck" inflation reveals a situation of intrinsic incompatibility between stability and full employment in a bottlenecked economy. In the cases of bottlenecks with low or zero price elasticity, it reflects a situation in which full employment becomes physically impossible even when society is ready to tolerate inflation.

This "bottleneck" inflation differs from both demand and cost-push inflations. In being essentially recessive and in operating below full employment, it differs from the first, because it is not due to excess demand with respect to the full employment level of productive capacity; excess demand appears with respect to the bottlenecked supply of a specific item which does not suffice to meet the requirements of fully employed productive capacity.

But it also differs from cost-push inflation. In this latter price increases originate in decisional mechanisms, such as the pressure exerted by unions and oligopolistic and monopolistic corporations. In their struggle for a bigger share of income unions and big companies try to get ahead with respect to the reference level which, by virtue of historical antecedents, they already consider as "normal". "Bottleneck" inflation, in turn, is essentially a result of market forces, which cause prices to increase in response to sectorial disequilibria between supply and demand. Decisional pressures also exist, but confine themselves to propagate the original impulse and are exerted in retreat, in defense of the income levels which by virtue of historical precedents different sectors consider as their acquired right.

Why is it that this phenomenon has only become evident in recent times? During some 25 years following Bretton Woods, the system worked reasonably well in industrialized countries, at least in appearance. Devaluations were not frequent. Instead, these countries resorted to short-term capital, available in abundance, due mainly to the continuous injection of new dollars into the international circuit of payments. The few devaluations which did take place found an elastic response of exports and of import substitution, so that equilibrium could be recovered without seriously affecting real wages. The time span required by the new measures to be effective was covered by short-term capital so that, with some exceptions we shall see later, unemployment periods were also infrequent. Finally, the smooth and permanent international interconnection of the markets of goods allowed productive bottlenecks to be swiftly overcome through imports.

The situation changed only in recent years. On the one hand, the simultaneity of the world-wide shortage of raw materials in 1973-74 made it impossible to overcome productive bottlenecks by means of imports. On the other hand, the oil crisis created an aggregate trade deficit of oil-importing countries. Compensatory capital movements - which, as we shall see, only work as a palliative and never as a long-term remedy - were blocked by the progressive exhaustion of the capacity of foreign indebtedness. Productive bottlenecks and external bottlenecks became evident, coincidentally with increased union power and mounting social resistance to any fall in real wages.

However, the phenomenon is not new, since for many years it has been a constant in many primary-exporting countries undergoing industri-

alization. (1) In these countries both exports and imports are rather inelastic to alterations in the exchange rate and there exists, in addition, a marked propensity to productive bottlenecks. That is why bottlenecks and all problems related to recessive inflation emerge in these countries with particularly sharp contours. Therefore, the analysis of their problems acquires a twofold importance. On the one hand, as a contribution to the solutions of crises of a major part of the developing world. On the other, as an illustrative and useful contribution towards a change in the paradigm that would bring the present world crisis in industrialized countries into adequate focus. (2)

II - PRIMARY-EXPORTING COUNTRIES UNDERGOING INDUSTRIALIZATION

1) Unbalanced productive structures (UPS). (3)

In the pre-industrial stage of their development, primary-exporting countries are faced with a lack of employment capacity in their primary sectors, with the vulnerability of their monoproduction to oscillations and limitations of world demand, and with the lack of the modernizing political, social and technological element represented by industry.

In order to fully employ their labor force, to diversify their production and, simultaneously, to "learn by doing", many of these countries embark upon a process of industrialization. (4) But the relative productivity of the new and immature industrial sector is always much lower than that of the traditional primary sector - minerals, tropical goods, farm products, etc. - which works, under the shelter of natural advantages, for the export market. This circum-

Note: (1) As per Harry Johnson, if Western economists were not so parochial, they would have realized that "stagflation" is a repetition of the old Latin American phenomenon. See Johnson, H.

Note: (2) According to Olson and Clague, science proceeds in a cumulative way and any change in a paradigm adds more than it takes away, utilizing most of the concepts used today and incorporating new variables which at present are not taken into account. See Olson and Clague.

Note: (3) See Diamond, M. (1969)

Note: (4) See Kaldor, N.

stance implies an option: either industrialization is given up or it is undertaken, but deliberately ignoring the classical principle of comparative advantages (at least, in its static and simplistic version which overlooks externalities and the alternative social cost of idle resources.) The option to industrialize implies industrial prices higher than international prices. (1) Due to historical precedents, the exchange rate is based on the costs of the more productive primary sector. When expressed in dollars based on the primary exchange rate, relatively higher industrial costs and prices turn out to be much higher than those in force on the international market. So as to enable industry to be born and to subsist, it is indispensable to protect it by means of high import duties, which amount to a system of multiple exchange rates for imports, with an industrial dollar costing more than the primary one.

One thus arrives at peculiar productive structures. Their main trait is the co-existence of two sectors with very different productivities: the less dynamic primary sector which works at international prices and exports, and the protected and more dynamic industrial sector which works at prices higher than international ones and, unless it is given special industrial exchange rates for export, produces only for domestic consumption. In previous papers, I called these configurations unbalanced productive structures or UPS. (2)

Economic growth in UPS is mainly concentrated in the industrial sectors. But their capacity to generate foreign exchange rests upon the primary sectors which usually have a much lower growth rate than industry. In many cases, primary exports are faced with a rigid world demand. In others, there are supply limitations. Primary production, at least in the short term, works at increasing costs. More intensive production is also more expensive. For example, the

Note: (1) If policies are rational from the very beginning, this jump can be less violent than those which can be seen in practice. Members of the structuralist school were the first to approach the topic of differential productivities. See Grunwald, J.

Note: (2) Strictly speaking, all productive structures are somehow unbalanced. One of the distinguishing features, in this case, but not the main one, is the large discontinuity between sectorial productivities (if this were the main criterion, Germany and France would be UPS too, although the other way round). The most relevant hallmarks that justify a special name are the higher rate of growth of the less productive sector and its high content of imports.

cost of agricultural production rises in step with the yield demanded per hectare or when marginal lands are resorted to. The same thing happens in the case of mining, when less accessible deposits are being exploited. But the exchange rate is generally adjusted to extensive production, and its improvement so as to adjust export prices to the higher costs of intensive exploitation would imply a fall in real wages which societies are reluctant to accept. (1)

Whatever the cause of the relative delay of primary exports may be - rigidity of the world market or social resistance to a regressive redistribution of income or both - the capacity to generate foreign exchange chronically lags behind the growth of productive capacity and the need for foreign exchange which the latter entails.

In the first stages of import substitution the delay is compensated by the reduction of the import coefficient. But when substitution reaches intermediate and basic stages with high content of capital and technology and hallmarked by large production scales, the import coefficient tends to stabilize. (2) As from this point there appears a permanent lag between economic growth and the capacity to generate foreign exchange. The chronic bottleneck in the external sector is born, which induces a fall of the growth rate and often leads to a general reduction of economic activity and unemployment. (3)

2) Devaluations and exchange inflation (4)

In UPS devaluations operate in a conventional way only when it is necessary to preserve the exporting and import-substituting sectors from an impairment of incentives brought about by a previous

Note: (1) This latter is the Argentine case (except for cattle-raising). ECLA, with its thesis on the deterioration of the terms of trade, only concentrated on the first limitation, without paying attention to the second. In both cases, mention should also be made of fluctuations in world prices.

Note: (2) For limitations to the substitutive process see Felix, D.

Note: (3) The concept of external limitation, under different names, was created by ECLA. It propagated through structuralist literature. See Prebisch, R; Furtado, C; Hirschman, A; Ferrer, A.

Note: (4) See Diamand, M. (1971d)

domestic inflation. But they hardly serve to remedy the external imbalance arising from the secular divorce between imports and exports, induced by economic growth. Nearly all imports are indispensable, since they have practically been reduced to the minimum level compatible with the normal functioning of local productive activity. Later substitution implies stages with high capital density, calls for great incentives and is not attainable in the short run. Industrial exports, provided they do not enjoy any kind of special treatment, turn out to be virtually impossible because the gap between the prices of the industrial sector and those prevailing on the world market is so wide that it cannot be bridged by devaluation. Traditional exports, when limited by world demand, do not respond to local incentives. When they are limited by supply, they do respond - in principle - but with low elasticity, with a considerable time lag and at the cost of a strong redistribution of income.

Let us start with the case of limitation by the world market.

Devaluation increases the domestic prices of exported and imported products, thus raising both costs and prices in the whole productive system. The impact is always much greater than the one which apparently might be deduced from the percentage of international trade in the GNP for three reasons: the automatic drag effect of the prices of actually exported production on those of exportable but locally consumed products; the automatic drag effect of the prices of imported goods on importable, but in part locally supplied productions; and also, frequently, a rise in amortizations because of a revaluation of the stock of capital goods. (1) In this respect, foodstuffs have nearly always a specific weight: either they are exported, in which case devaluation leads to a "dragged-on" increase in domestic prices, or they are imported, and their prices rise because of increased costs. (2)

However, because of exogenous limitation of exports which was assumed, devaluation fails to bring about the sought-after equilibrium. Real wages fall, apparently without any limit. Finally, something has to give. The limit appears, but not because of the price effect. It appears due to the income effect. The fall in real wages and progressive illiquidity reduce global demand. Production

Note: (1) The latter is a particular case of "mark-up pricing" which, though not included in textbooks, is applied by most companies in order to preserve their real capital.

Note: (2) Case of Argentina and of Chile, respectively.

declines and, together with it, so does demand of foreign exchange. The equilibrium is attained when recession is sufficiently deep so as to adjust the demand of foreign exchange to its bottlenecked supply. Since by hypothesis exports are limited by world demand, not even in the long run does the sacrifice stimulate exports and the system can only be maintained in external equilibrium by permanent recession and stagnation.

Let us now analyze the second case, that of UPS with primary exports limited by domestic supply. Although the limitation is different, the unavoidable time lag in the response of exports to devaluation leads to short term effects identical to those of the previous case - that is, to a fall in real wages and to recession. In the longer term, if society were prepared to endure indefinitely the sacrifice of a strongly regressive income redistribution imposed on it, primary production - and consequently, exports - could rise. (1) However, both in the first and in the second case, societies resist any regressive redistribution of income and unemployment, forcing wage increases and the adoption of reactivating monetary policies. But this procedure neutralizes the regressive and recessive effect on which external equilibrium has been based. Thus, governments have no other choice than to push for (or to admit) a further devaluation. Real wages drop again, as do the levels of monetary liquidity, demand and employment; popular pressures gain new momentum and so on, in the fashion of the inflationary-recessive spiral already described, with inflation rates which can skyrocket to several hundred percent a year. (2)

In all my previous papers I called this particular type of "bottleneck" inflation, originated in the external bottleneck and in a subsequent recessive race between devaluations and wages, "exchange inflation". (3)

Note: (1) This is the Argentine case, For an exhaustive analysis of Argentine devaluations and, particularly, of income transfers, see Diaz Alejandro, C. (1965).

Note: (2) About 900% from April 1975 through April 1976 in Argentina. To the regressive redistributive effects already mentioned another one is to be added, deriving from inflation itself, to the detriment of sectors with fixed income and owners of monetary assets.

Note: (3) The existence and main traits of this inflation were tackled by several authors, but never in depth. See Diaz Alejandro, C. (1965); Prebisch, R; Seers, D.

Summing up, in the case of exogenous limitation by world demand, and always within the stated terms, the external bottleneck turns out to be insoluble, whether with price stability or with exchange inflation. In the case of limitation by domestic supply, although the bottleneck could be alleviated in the long run by means of permanent change in relative prices, this change is made impossible by the conflict with income distribution.

It would seem that in the second case the only thing opposed to economic take-off is social inability to tolerate a temporary fall in real wages in pursuit of future welfare. But neither is this true. Even in the most hypothetical case of a docile society, ready to endure sacrifice, it would be very difficult to reach economic take-off. Regressive redistribution of income makes global demand decline and leads to the under-utilization of productive capacity. Once the external deficit has been overcome, this decline could be counter-acted by expansive monetary and fiscal measures. But such measures would lead to a new global demand with a different composition. The demand for mass consumption goods would drop and, in principle, funds available for investment would rise. But with the existing idle capacity, investments would hardly be made in mass consumption lines (and their raw materials). Available funds would be channeled towards speculative, financial or foreign exchange investments. Finally, under the excessive pressure of these funds, the government would be forced to cut off expansion. In conclusion, even if external limitation were overcome, both production and growth would be limited by the insufficiency of domestic demand.

Turning back to inflationary phenomena, spirals similar to those described before arise from the bottlenecked supply of foodstuffs or raw materials. Here, imbalances could eventually be eliminated via imports. But in UPS this road is blocked by the insufficiency of foreign exchange. In response to the bottleneck, domestic prices rise. But supply, if it does respond at all, does not respond immediately. Demand, in turn, is very inelastic to prices; in the case of foodstuffs because they are essential goods and in that of industrial raw materials, because demand does not depend on their prices but on the production volume of the subsequent productive stages which employ them.

Therefore, equilibrium is attained through a sort of sectorial income effect. In the case of foodstuffs, when prices rise sufficiently so as to significantly affect the available income of consumers, displacing demand for other goods in the process. In the case of raw materials, when their price is sufficiently high so as to reduce demand as well as production in the final stages which utilize them as inputs. Thus, the price of steel stabilizes not when it reaches

a level unacceptable to buyers, but when it increases the price of cars and machinery to such an extent that their demand and production decline, thus inducing - indirectly - a similar drop in the demand for steel.

One of the main traits of "bottleneck" inflations is a pronounced budget deficit. This deficit, an endemic ailment of developing countries, rises suddenly as a result of this process. In the same way as it happens with cost-push inflation, the cause-effect relationship is exactly opposite to that which appears in demand inflations: it is not the budget deficit which causes inflation but it is inflation which creates, or at least aggravates, the deficit. This is because, in the first place, whilst fiscal expenditures are made at current prices (they keep their value in real terms), revenue is collected at the price level of the previous period (that is, it drops in real terms). In the second place, due to recession both taxable incomes and transactions decline. Finally, illiquidity prevents the taxpayers from discharging their tax liabilities.

3) Foreign capital (1)

In order to avoid the problems of recessive inflation described before, UPS resort to investments and loans from abroad. But rather than being a remedy, this is a very dangerous palliative. At a private company level, the attempt to solve a permanent deficit with the help of loans leads to cumulative indebtedness and, in the long run, to bankruptcy. This outcome can be avoided if these loans and investments become self-amortizable, that is to say, if they are so invested that their utilization allows to overcome the original deficit that made them necessary. There is a tendency to believe that this result can be generalized at the level of countries, and that, in order to give foreign capital self-amortizable standing, it suffices simply to invest it in the expansion of productive capacity. It is assumed that in this case there would be sufficient production to pay for the cost of the capital and to leave, in addition, a benefit to the host country.

This would be true, should insufficiency of investment capital be the original obstacle. But in UPS the urgency to obtain foreign capital and loans does not stem from a desire to increase the country's growth rate beyond the national capacity to save, but from a less ambitious and at the same time more pressing need to remove the

Note: (1) See Diamond, M. (1970)

external bottleneck, thus avoiding a drop in production below the levels reached by already existing productive capacity.

Consequently, foreign capital and credit is necessary, not so much in its role of investment capital required for growth, as in its role of foreign exchange (1), in order to avoid recession. In this second role, even if it is put to work in a way which, in conventional terms, could be considered highly productive, it is not necessarily self-amortizable. The main deficit of the country is not in terms of real resources, but in terms of foreign exchange, so that the condition of being self-amortizable is only met if the capital contributes to overcome the insufficiency of foreign exchange which made it necessary. In order to do this, such capital should not only be productive in general terms; it is essential that it should also be productive in specific foreign exchange terms. But since it is mostly dedicated to expand the domestic market, which rather tends to consume foreign exchange, the above condition calls for a deliberate channeling of investment by the government, which only seldom occurs.

The foreign investments and loans allow to postpone the external bottleneck, but generally without solving it and rather making it worse. In order to palliate the situation and to cope with the financial burden generated by former foreign contributions, a constantly rising inflow of new credits and investments is called for. The result is cumulative foreign indebtedness and progressive denationalization of the productive structure. The continuity of new loans and investments - especially that of short-term capital and sometimes of continually renewable swap operations - depends, in turn, on the confidence in the country's capacity to repay its debts; a confidence which fades away simultaneously with growing debts and financial services. Sooner or later the process is cut off. There appears a retraction of new loans, former ones cease to be renewed and there arises a new balance of payments crisis, generally deeper

Note: (1) Although this distinction is paramount to the admission of the limiting role of the external sector, it does not explicitly appear in the ECLA school which had been a pacesetter in diagnosing this limiting role. In the academic world, it arises for the first time in the "double gap" school, founded by Chenery in 1963. In an independent way, a few months earlier it appears in one of my papers, and later repeats itself in all of my publications. See Chenery, H.B. (1963 and 1966); McKinnon, R.L; Felix, D (1968); Nómica de Expertos; Diamand, M (1963). The antecedents can be seen in "The German Transfer Problem", Keynes, M. several decades before.

than that which the country had attempted to avoid by the influx of foreign capital. There is no possibility of avoiding devaluation, with its sequel of declining real wages and recession, and at a higher level of foreign indebtedness and of denationalization of the productive structure.

4) The solutions

Can the problems originating in external and internal bottlenecks be solved? As to unemployment, they can nearly always. In general terms, bottlenecks can be removed by means of an appropriate and timely concentration of social effort. It is a simple question of costs. But in the case of specific insufficiencies, with a great paralyzing effect on the rest of production, the cost is always low as compared with the benefit obtained by avoiding paralyzation.

The conflict between the policies needed to eliminate the bottleneck and real wages remains. Though this conflict is not fully removable, the two objectives can be made compatible much better than it has usually been done. The condition is a more sophisticated combination of instruments than that which can be provided by the market alone. The measures must also include price management, but as one of the tools of economic policy and never as the only one.

Structuring these measures calls for clear diagnosis and objectives. The priority must be to remove the external bottleneck whilst affecting employment level and wages as little as possible. The countries whose primary production is faced with limitations by world demand should as the only way out concentrate upon industrial exports. In so doing, they must take into account that obstacles to these exports are not originated in the physical and unremovable traits of UPS but in the pattern of exchange rates habitually used by them.

We have seen that industrialization in UPS is based on industrial dollars costing more than primary ones, with a difference arising from import duties. But these exchange rates, which recognize and also determine a structure of domestic industrial costs and prices higher than international ones, only apply to imports and not to exports.

The absurdity could not be greater. Were a small portion of manufactured production exportable - let us say 10 to 15% - it would be enough to provide the country with sufficient foreign exchange and to avoid the external bottleneck which paralyzes the rest of industrial production. But these exports cannot be carried out because of that small portion, in spite of being essential and deserving top priority, receives a much less favorable exchange

treatment than the rest of industry which is destined for the domestic market. (1)

The first measure should thus consist in restructuring the industrial exchange rates for exports. The starting point must be an exchange rate adequate for the primary sector. But there is no reason why this primary exchange rate for exports should coincide with the nominal exchange rate. The nominal exchange rate can be based on a more expensive dollar, reconstructing the primary exchange rate for exports which had been set as a starting point by means of the application of adequate export duties. Thus, we would have two basic exchange rates. On the one hand, the nominal rate which would be used for financial transactions, industrial exports and, with the corresponding import duties (much lower than in the conventional system), also for imports. On the other hand, we would have the primary exchange rate for exports, determined by the nominal rate less export duties. This reform would bring the nominal exchange rate substantially closer to the structure of industrial costs and would improve the possibility to export manufactured goods. (2)

Another alternative or complementary procedure is to build up a "de-facto" exchange system for exports with tax reimbursements and other fiscal stimuli. (3) Both procedures (the second one more explicitly) often collide with the apparent priority of a balanced budget. Yet budget deficit not only depends on state expenditures but also on revenues. And the latter, as we have already seen, decline sharply during the inflationary-recessive phenomena originated in bottlenecks. Therefore, when the increase in fiscal expenditures is aimed at an increase of the bottlenecked supply (in this case of foreign exchange), it is justified not only in economic but also in strictly fiscal terms. (4) Generally, and due to the great amplifying effect of the bottleneck on production (ten times in Argentina), the increase in

Note: (1) The procedure is also incongruent from the viewpoint of static efficiency. Guido Di Tella placed great emphasis on this point. See Di Tella, G.

Note: (2) This kind of exchange reorganization was proposed by many authors, including the plan drawn up under my direction. See Kaldor, N; Prebisch,R; Schydlowsky,D. (1966); C.A.R.T.A.

Note: (3) See Schydlowsky, D. (1967); Diamand, M. (1968b).

Note: (4) See Schydlowsky, D. (1967 and 1971.)

revenues, which is attained thanks to the reversion of the inflationary-recessive process, largely exceeds fiscal expenditure.

Apart from the above basic guidelines, the magnitude of the incentives to industrial exports must be related to the locally added export value so as to assure the proper efficiency of stimuli in terms of net foreign exchange earning. Direct promotional and negotiating action by the State tending to open up new markets is also of great importance. As from another point of view, the permanence of incentives is as important as their magnitude. The greater the confidence in the stability of the rules of the game, the smaller will the incentives needed to induce exports or import substitution have to be. Finally, there are scores of non-traditional products, such as specialized regional crops, flowers, fruits, etc. which, although not industrial exports, offer the most favorable prospects for promotion, and generally at relatively low cost.

Independently from the action on non-traditional exports and as long as the external bottleneck is not definitely eliminated, efforts should be made to reduce the percentage of imports in the GNP. Usual import policies, despite their global protectionist nature, do not ensure this reduction because they always arise as a result of pressures exerted by conflicting interests and ideologies and are hallmark by serious inconsistencies. In many cases, a lower level of protection is given to finished products and capital goods than to the raw materials they incorporate (a long-standing problem in Argentina). It is also usual that while purchases by the private sector are protected, those to be made by the State and state enterprises are duty-free. Finally, due to frequent changes in the orientation of governments, similar products generally receive a very inconsistent treatment. A product which by chance had already been manufactured during the last protectionist government will enjoy high protection. At the same time, a similar product, that was not manufactured locally, because it had lost the opportunity remains unprotected and can never be manufactured. A reorganization of the respective policies along more rational guidelines would allow to increase substitutive production, removing by the way many excessive protection peaks.

All this action in the field of industrial imports and exports should be integrated with the fiscal and credit tools of industrial promotion as well as with the creation of proper mechanisms for the mobilization of local savings with a view to enabling investments in high capital concentration and highrisk productive sectors. Particularly, a permanent promotional effort is called for in order to avoid the process of de-substitution of imports which arises when local production of already substituted basic and intermediate goods grows more slowly than final production which employs them as inputs.

So as to forestall apparent conflicts with the static efficiency implicit in increased protection, it should be made clear that the priority assigned to efficiency by the traditional paradigm is only valid in the premise of fully-utilized resources. (1) A bottleneck lowers the dynamic efficiency of the whole system to such an extent that its removal and the consequent putting into operation of idle resources become much more important than a rise in the static efficiency of those resources which continue working. Therefore, when the two objectives seem to be opposed, one should always decide in favor of the action against the bottleneck, although between two different alternatives which allow to remove it, it is always preferable to choose that which offers greater static efficiency.

The above considerations in no way discard the use of foreign capital as a source of foreign exchange in emergency cases and as a more permanent complement of local investment capital. The difference with respect to the traditional procedure should consist in the emphasis of the self-amortizable nature of foreign contributions. Either foreign funds directly, or the time they allow to gain, must be employed to generate exports and to substitute imports, thus making them self-financing in terms of foreign exchange. (2) In other words, it is necessary to avoid the danger of the indiscriminate and long-term use of foreign funds instead of exports and import substitution, at the same time stressing the convenience of utilizing them to develop more exports and a greater substitution.

All this refers to the case of UPS with primary exports limited by world demand. Countries with primary exports limited by supply are in a better position because they also have the possibility of increasing their primary production. The respective policy, so as to be viable in the long term, must be made compatible with real wages. If a certain transfer of income in favor of the primary sector turns out to be inevitable, it is necessary to ensure that each dollar transferred to the detriment of real wages allows the attainment of a maximum dollar increase in primary supply.

Note: (1) Classic authors did not need to spell out this premise, since to them resources were always fully utilized. See Robinson, J.

Note: (2) This was the procedure followed by Brazil in the last years: heavy indebtedness, followed by intense promotion of exports and of import substitution.

Let us take the case of Argentine agriculture. As we have said before, agriculture operates at increasing costs. When a higher price is indiscriminately granted for all agricultural products, the larger incentive not only applies to the second ton of grain per hectare, which really needs it, but is also given as a windfall gain to the first ton of grain whose cost had not risen. In other words, the general price rise not only implies a marginal stimulus needed to compensate the higher costs of intensive production but also an intra-marginal gain corresponding to the extensive production which has already been carried out before.

To obtain the maximum profit of the income transfer in terms of increased production, incentives should be marginal. The simplest procedure is to set very remunerative prices for production but to establish, at the same time, fixed compensatory taxes on land, on the basis of its potential rent or market value. The fixed tax would be quantified in relation to the price increase so as to give the same income as before to the usual extensive production (the first ton of grain per hectare). In this manner, additional production (the second ton) would automatically enjoy a greater marginal incentive since it would have a higher price without paying any tax. A similar effect could be achieved in marginal zones, by virtue of a lower tax on land than that which would be applicable to them.

The scheme proposed, when applied to exportable primary products which are also consumed locally - for instance, foodstuffs - , neutralizes an excessive increase in the income of the primary sector but as yet does not avoid the rise in domestic prices and the fall in real wages. Income equilibrium is re-established by means of channeling increased tax revenue so as to increase the purchasing power of wages: replacing contributions to social security funds made by wage earners; subsidizing some foodstuffs - for example, non-exportable beef cuts, etc. -; reducing taxes on some mass consumption goods, thus cutting their prices. In a longer term, the trend should be to reduce taxes also on the industrial sector so as to lower industrial prices and thus compensate the increase registered in food prices. The very important implication of this reprogramming of prices would be the approximation of industrial prices to primary ones and a lesser dispersion of the whole structure of primary and industrial exchange rates. (1)

Concerning productive bottlenecks, the more fluent supply of foreign exchange would help to remove them. On the other hand, procedures

Note: (1) See Alfano, M.H; Cuello, R;

similar to those outlined for the external sector, tending to provide greater marginal incentives, would open up a way for direct action upon them.

However, the adoption of a line of action such as has been outlined is far from being easy. The implementation and quantification of the measures passes through multiple technical levels of public administration, where they systematically collide with opposite priorities emerging from the traditional paradigm.

5) The blocking role of the traditional paradigm

Traditional blocking thought is supported by two rationalizing pillars. The first one is the already mentioned refusal to accept that resistance to decline of the real wage is a legitimate fact of life. The second one is the refusal to accept as a legitimate phenomenon the unbalanced productive structure as such, having been born in a violation of the principle of comparative advantages. Therefore the bottlenecks which, as we have seen, originate in a combination of both causes, appear as a pathological phenomenon. Bottlenecked economy, instead of being visualized as a peculiar configuration, subject to different laws and priorities, is perceived as a conventional economy with some temporary and not too significant deviations from equilibrium which can be overcome in the short term by merely submitting the economy to the action of market laws.

The unemployment of resources, the acceptance of which would call for a reconsideration of the whole analytical framework, disappears through a semantic trick, by defining as the full employment of productive capacity the level given by the full utilization of the scarcest item. Thus, the level of foreign exchange supply ceases to be recessive and is transformed into a normal level of full employment. Bottlenecks cease to exist as if by magic. Production which pretends to exceed this re-defined level of "full employment" becomes over-expansion. The inflation arising from the gap between demand and bottlenecked supply is not a "bottleneck" inflation but a simple demand inflation. Disequilibrium in the external sector is not a bottleneck but the consequence of an inadequate exchange rate and of an excess demand which "spills over" onto imports. (1) The increase in budget deficit is not caused by inflation but vice versa: it leads to inflation. The decrease in liquidity aimed at reducing demand to the level of the bottleneck is not a recessive measure but

Note: (1) This concept appears, more or less explicitly, in all papers which justify the thesis of the International Monetary Fund. See Constanzo, G.

a return from over-expansion to normality. Neither is the resulting transfer of income regressive; it is the recovery of a distribution compatible with real possibilities. Increased protection or increased dispersion of exchange rates are not specific measures designed to overcome the bottleneck, but steps which further aggravate the original sin of interference with international free trade.

As far as foreign capital is concerned, by ignoring the gap between foreign exchange supply and full employment, there is no reason why any difference should be made between the role of foreign contributions as foreign exchange and as investment capital. So neither is there any need for these contributions to be productive in terms of foreign exchange. The danger of cumulative foreign indebtedness disappears by merely giving them a productive use in conventional terms. Confidence of foreign investors becomes a universal panacea, etc.

So, by means of a single key redefinition, the whole real universe of countries with bottlenecked economies is erased and is replaced by the fictitious universe of the traditional paradigm.

6) The "stabilization" plans

In spite of all this, orthodoxy does not remain untouched. In the same way as it occurs with all rigid religions, dogma survives thanks to its practical tolerance. Thus, in the course of time, under the pressure of reality and the influence of heterodox ideas, in different UPS multiple exchange rates, tax reimbursements, compensatory taxes for industrial exports, tax on land, etc. have been appearing. At the same time, protection policies and measures designed to channel foreign capital have also grown stronger and stronger.

However, it still is a matter of ad-hoc and improvised measures. In the same way as it has been the case of the reactivating budget deficits before Keynes, these measures are adopted under the pressure of circumstances, not within the framework of an integrating paradigm, but in defiance of all that is taught at the universities. They are taken with a bad conscience and with the deficiencies, inconsistencies and permanent retreats inherent to any procedure which goes systematically against the prevailing intellectual scheme. Adopted without conviction, badly quantified and incoherent, these measures do not suffice to counteract the basic trend towards foreign deficit and indebtedness. When, after a periodic cycle of indebtedness, a new crisis appears in the balance of payments, short-term maturities of foreign debt are generally stockpiled to such an extent that not even a total paralyzation of productive activity and a full stoppage of imports would suffice to provide the foreign exchange needed to

pay for them. The only way to avoid a cessation of payments is foreign aid, either as a refinancing operation or as new loans. But international financial entities always condition this assistance to the adoption of measures which would allow to eliminate the foreign deficit and the appraisal of these measures is determined by the perception of the phenomenon in the framework of the traditional paradigm.

The result are the well-known I.M.F.-type stabilization plans. (1) The main measures contemplated in these plans are: devaluation, generally very pronounced, monetary restriction in general and, especially, the elimination of the budget deficits financed by monetary issue, admitting - as the only exception - monetary expansion based on the inflow of foreign exchange. Another usual measure is the wage-freeze. (2) Finally, the plans nearly always include some "efficientist" measures, such as rebates in tariff protection, removal of exchange controls, the dismantling of multiple exchange rates, etc.

Viewed from the point of view of the traditional paradigm, the measures are the maximum expression of common sense. Devaluation is necessary in order to correct the exchange rate which became outdated due to inflation; monetary restriction and the elimination of the budget deficit are destined to halt inflation; lowered tariff protection and the return to a single exchange rate aim at stimulating efficiency; finally, exchange freedom is aimed at restoring confidence and at promoting loans and investments from abroad.

Applying a corrected conceptual prism, devaluation means greater incentives for the traditional exporting sector to the detriment of wages and other urban incomes. Monetary restriction is aimed at inducing recession. The plan is called "stabilization" plan but its first visible effect is a heavy inflationary impact as a result of devaluation with which the word "stabilization" gets a somewhat ironic undertone. The purpose of the plan is effectively to stabilize but not

Note: (1) The plans are very similar to one another. For their justification and description, see Constanzo, G., already cited. Critical view of the plans in Argentina, besides my works, already cited, can be seen in Eshag, E. and Thorp, R; in Peru, Thorp, R; in Chile, Echeverría, R; in Sudan, Green, R.H.

Note: (2) At this point, there is a remarkable deviation from the doctrine of free market forces. As per Díaz Alejandro, this doctrine is notably selective and asymmetric, and it is maintained or left aside according to the effects purported to be attained. See Díaz Alejandro, C.F. (1976).

from the very beginning; stabilization should be maintained, but after the regressive and recessive configuration is arrived at by means of a previous half-turn of the inflationary spiral, propelled by devaluation. All measures - monetary restriction as well as wage freeze - are precisely aimed at maintaining the system at this point, avoiding reactivation.

This aim can be seen more clearly if we analyze the real meaning of the presumably anti-inflationary struggle against the budget deficit. This deficit would actually have an inflationary effect if it led to excess demand. But, amidst a recession, what is precisely missing is demand and the deficit would rather be necessary to increase it and to reactivate economy, so there would be no reason to restrict it. However, it happens that, in presence of the external bottleneck, this reactivation would really be inflationary - not because it would imply a global excess of demand with respect to productive capacity but because it would lead to an excess demand with respect to the production limit set by the availability of foreign exchange. Thus, a balanced budget is sought after as a recessive tool, capable of preventing the economy from being reactivated and production from exceeding this limit.

On the other hand, the "efficientist" measures, consisting of lower tariff protection and a unified exchange structure, not only block the way for all the rational solutions outlined before but also contribute to increase the proportion of imports in the GNP and to discourage even those industrial exports which could have opened their way to foreign markets. The result is a further aggravation of the external bottleneck and the uncalled-for deepening of devaluation and of the under-utilization of the productive capacity which were required to restore the balance of payments equilibrium. Inflation, instead of being reduced, increases and recession creates, at the macro-economical level, a dynamic inefficiency incomparably greater than the pretended rise in static efficiency.

In practice, stabilization plans are faced with great difficulties arising partly from political resistance and partly from technical problems originating in their own internal inconsistencies. The first inconsistency is to pretend to eliminate budget deficit exactly at a time when it reaches abnormally high levels due to the whole inflationary-recessive phenomenon. So as to fulfill this objective - a practically impossible one - governments dismiss personnel from public administration, demoralizing and dismantling even more their weak state apparatus. But not even in this way do they succeed in reducing expenditures; instead, they do reduce revenues. Another usual remedy is compulsory payments by fiscal bonds to state cred-

itors and sometimes even suspension of payments. Obviously, in the long run the methods do not work and the governments are forced to monetary issue, thus breaking the solemnly assumed commitments and reactivating the economy.

This break of the dam often means a real reactivation, since it usually coincides with a certain recovery in the external sector, achieved in the meantime. This recovery is due to a drop in imports because of the crisis and to the return flow of capitals from abroad: partly because of loans to the government and partly due to the loans to the private sector. In the same way as happened in the case of the gold standard, the lack of domestic credits forces both private and public enterprises as well as banks to resort to foreign financing. These entities exchange foreign currency for local money and the foreign exchange is used by the country to cover the external deficit.

If the inflow of loans is intense, it can sustain a full economic reactivation and even increase Central Bank reserves. Two or three years can ensue in which the country not only considers the external bottleneck as eliminated, but even, in view of the bonanza, ends up by further dismantling the protection and export promotion mechanisms.

Unfortunately, the mechanism of cumulative indebtedness leads very soon to a new collapse and the whole process reinitiates again. There thus arise periodical stop-and-go cycles which hallmark primary-exporting countries undergoing industrialization, with the typical sequence of recession - "confidence" - recession.

The balance of each one of these cycles is growing foreign indebtedness - either explicit or implicit in foreign capital investments. As a positive counterpart, there may be some growth in substitutive industries. As far as primary exports are concerned, obviously there can be no improvement in countries in which they are limited by world demand. But usually there is no large improvement either when exports are limited by supply. Expansion of any productive activity, rather than on actual incentives, is based on expectations related to their permanence in time. Experience shows that these incentives cannot be maintained when they rest upon a fall in wages and recession. Therefore, the primary sector confines itself to take advantage of the favorable moment absorbing the increased income and, if it responds with a production increase at all, this increase is by no means in relation to the rise which would have been expected by virtue of the social and economic cost paid by the rest of the country.

All this blocking mechanism is only partly due to the requirements of the financial institutions. Ideological influence outweighs direct coercion. Developing countries, through the economic models taught

at the universities, textbooks, mass communication media, statements of prestigious private and public institutions abroad, briefly, through all factors which constitute informed world opinion, receive a cultural heritage. This heritage acts as an additional growth blocking mechanism, similar to the effects of the classic model on Keynesian crises before the 1930's (1) and further aggravates their already serious and very real economic problems.

The problem is further intensified because the economic cycle deriving from the nonfeasibility of orthodox policies overlaps with a political cycle hallmarked by pendular swings between orthodoxy and populism. This latter current is advocated by political and union groups opposed to the "establishment". Intellectually based on Keynesian roots and with some, rather incoherent, Marxist ingredients, its proclaimed aims are increase in demand and in consumption and a progressive distribution of income. Its usual byproducts are the glorification of everything which means low labor productivity and statism for the sake of statism itself.

Populism usually comes to power when it is feasible, that is, in the favorable stages of the external cicle, when Central Banks have a high level of reserves. But in its eagerness to distribute, populism leaves aside the restrictions imposed by productive capacity, its bottlenecks and, fundamentally, by the external sector. After a few years, productive bottlenecks become inevitably aggravated by disinvestment while discouragement of exports accentuates the economy's natural trend towards external imbalance. (2) This is partly due to the government's willingness to carry on progressive income distribution beyond real possibilities but also to an absurd ideological posture according to which exporting means sacrificing local consumption and creating dependence.

When bottlenecks appear, the usual reaction is direct control on prices, exchange rates, imports, energy, etc. These controls give the populist government an additional breathing time but at the cost of growing direct intervention, of corruption and chaos. Finally, the régimes fall due to their own disorder. The net result is the discredit of heterodox mechanisms and ideas and a reaffirmation of the conventional wisdom, which emerges from the cycle stronger than ever. Only after a few years, the new failures of orthodoxy make public opinion swing back to populism and the political cycle repeats itself, in a destructive and absurd pendular motion.

Note: (1) These blocking effects are brilliantly described by Galbraith. See Galbraith, J.K. (1960).

Note: (2) See Canitrot, A.

III - THE INTERNATIONAL CRISIS

1) The international monetary crisis up to 1971

Although in Bretton Woods the international payment system had been modified, it remained dependent upon gold reserves which did not rise in step with the increase in prices and the growing volume of transactions. The trend towards international monetary illiquidity was overcome because the U.S., backed by its accumulated gold reserves, succeeded in converting the dollar into a reserve currency acceptable at par with gold. Dollar abundance outside the U.S. was due to the latter's persistent balance of payments deficits caused by high military expenditures, foreign-aid programs, investments abroad and, also, by the growing deterioration of the country's trade balance due to inflation.

The initial acceptance of dollars was based on the premise of their convertibility into gold upon request. But, in the course of time, the amount of dollars abroad kept on growing, being furthermore multiplied through the creation of Eurodollars by U.S. banks in Europe. At the same time, the gold backing was shrinking. As from 1959 the amount of dollars potentially demandable abroad began to exceed gold backing. Convertibility became a mere fiction and the dollar started to operate as a currency without any actual backing.

Thus, the U.S. attained the privilege of being able to finance its balance-of-payments deficits with its own monetary issue, tolerated by other countries because a greater monetary liquidity was beneficial to them. But this same mechanism also allowed the U.S. to acquire, with the money it printed, real resources in other countries. It was this second reason for which international resistance began to mount and led, in the 1960's, to an intense political pressure against U.S. recurrent balance of payments deficits.

The response of the U.S. should have been to devalue the dollar vis-a-vis gold. But the most important condition of a reserve currency is its stability. The measure would have meant sacrificing part of the prestige and hegemony of the dollar. Therefore, the U.S. resisted devaluation for many years, placing itself in a pre-Keynesian position in which, save direct controls to which it also came partially to resort to, the only way left to balance the external sector was to sacrifice economic activity.

As a response to outside pressures, restrictive monetary and fiscal policies began to be adopted periodically. Although rationalized in

each opportunity as anti-inflationary policies, their objective was similar to the one pursued by I.M.F. stabilization plans: to eliminate the balance of payments deficit. The comparative slow growth of North American economy and the recession during Nixon's first presidential term were the result of this systematic sacrifice of the domestic market and of employment in pursuit of dollar stability and U.S. financial hegemony. (1)

A phenomenon of a very similar nature had appeared in Great Britain, a country which, as from the early 1950's, so as to preserve the declining financial prestige of the pound sterling - the second reserve currency - also resisted devaluation. Instead of devaluation, for nearly 20 years it had been palliating its external problem by means of cumulative indebtedness, and every time the latter exploded, with periodical pre-Keynesian recessive tools consisting of monetary and fiscal restriction. The situation ended in pronounced stop-and-go cycles determined by the external sector, much more pronounced than in the U.S. and very similar to those taking place in UPS (2).

The tendency to postpone adjustments in exchange rates and to alleviate external disequilibria through short-term capital was also shared up to 1971 - although not so clearly - by the other industrialized countries.

2) The 1971-73 world expansion

Instability in the international system of payments led in 1968 to a sort of international "exchange controls", applied to gold reserves, to the creation of the special drawing rights as a complement of the dollar and, in 1969, to recession in the U.S. This recession came to an end because of the dramatic change in economic policies in 1971, when the U.S. economy had freed itself of external limitation, at the cost of sacrificing the stability of the dollar. The successive dollar devaluations, reinforced by some import restrictions, opened the way to economic recovery. Direct price controls, applied simultaneously, were adopted in order to avoid excessive rises of prices and wages. The expansion propagated to the whole industrial world, becoming a phenomenon without any precedent because of the high growth rates, high employment levels and, above all, because of the simultaneity of the process.

Note: (1) See Triffin, R; International Study Group of 32 Economists; Cooper, R.N.

Note: (2) See Lekachman, R. (1970); Cohen, B.J.

The expansion was held back by the bottlenecks. In 1972, due to climatic problems, world-wide cereal output instead of growing at the historical rate of 3.5 percent, fell by 3.5 percent and agricultural prices all over the world underwent a spectacular increase (1).

The inflationary effect was deepened by the influence of the respective devaluations. Thus, in the U.S. import prices rose by 17 percent between 1971 and 1972. The generalized advent of floating exchange rates in 1973 reinforced this local inflationary component arising from devaluations in all the countries whose currencies were losing value.

As from mid-1973 the situation became even more complicated, since there began to appear bottlenecks in the supply of industrial raw materials, mainly of those corresponding to the second stage of processing, in which primary products undergo their first industrial transformation: steel industry, production of electrolytic zinc and Solvay soda; as well as in the capacity of sawmills and in the petrochemical industry. This latter bottleneck was much more serious than the much more publicized oil shortage during the temporary supply restrictions.

The productive stages in question are hallmarked by great capital density and by the long time required for investments to mature, that is, by a long interval between decisions to invest and the first fruits of the investment. Thus, their response to any rise in demand is very slow. In addition, decisions are never based on the present situation but on the foreseeable situation at the time the investment is expected to mature. As till 1971 world economy was moving along the track of low demand, with a high percentage of idle capacity and with large accumulated stocks, there were no incentives to investment. The 1971-73 boom exhausted the idle productive capacity before the first decisions to invest could be made and, logically, long before these new investments could mature. Moreover, because of the simultaneity of the expansion throughout the world the compensation of bottlenecks through international trade was very limited. (2)

When capital-intensive stages become saturated, their short-term supply turns inelastic to price. Demand for industrial raw materials

Note: (1) The process is analyzed in detail by Bosworth, B; by Nordhaus, W. and Shoven, J; Cooper, R.N; and Lawrence, R.Z.

Note: (2) The causes of delay in investments are analyzed by Nelson, S.

is also inelastic to price, since their utilization is not determined by free choice of the buyer but by the technological requirements of the productive stage which uses them. Under these conditions, disequilibrium between supply and demand led to spectacular price increases.

Although the large manufacturing companies partly respected the prices arising from former contracts, in new sales the prices of many raw materials increased two, three or four times, and in some cases - as in those of petrochemicals and plastics - the rise was tenfold. The general index of industrial raw materials, as published in The Economist, in May 1974 reached 264 as compared to 100 in 1970. Price controls, adopted by some governments, were made ineffective by the black market. Also, taking advantage of freedom of foreign trade from price controls, there appeared the subterfuge of crossed exports: companies producing raw materials in country A exported to country B while companies in B exported to A.

Which type of inflation could the 1971-74 phenomenon be assimilated to? Increases were clearly induced by a market mechanism, and were caused by an actual imbalance between supply and demand. However, the large idle capacity showed that it was not the case of an inflation originated in global excess of demand. On the other hand, though inflation was propagated via some wage increases, the latter were lower than price rises, thus causing the fall of real wages virtually all over the world. Another trait, which clearly shows that the price increases were rooted in raw materials, was the strong lead of raw-material prices over final consumer prices shown by the lead of wholesale price indexes over retail ones. In short, all traits point at a "bottleneck" inflation of a type till then reserved to developing countries.

There also was a recessive effect though not immediate. Industry works with a certain volume of operative stocks of raw materials, which are the first to dwindle when the shortages appear. But while a high final demand still exists, industry wants to ensure work continuity and resists this decline of stocks. Very often it even over-reacts to shortages raising stocks. The result in 1973 was a strong imbalance between supply and demand and price increases before the shortages could be felt physically in the final stages. Finally, these shortages would have put a physical limit to production. But, in the second half of 1973, economic growth began to slow down, as a result of monetary and fiscal restrictive measures some governments began to adopt in order to halt inflation. In 1974 these measures joined and were reinforced by the recessive effect brought about by the oil crisis.

3) The oil crisis: successive models

Between late 1973 and late 1974, the oil exporting countries grouped together in OPEC increased oil prices fourfold. This increase, in the first stage of the process, contributed to the world-wide "bottleneck" inflation with an ingredient of cost-push inflation, originated in the oligopolistic price fixing, as the one prevailing among large corporations, but this time at an international scale. Nevertheless, through its indirect recessive effects, this increase became - paradoxically enough - the main force to curb inflation. Finally, it became converted again into the propelling force of inflation, but this time local exchange inflations, at the level of individual countries. In order to analyze this process, we must carefully distinguish between the two effects of the oil price increase: its inflationary effect, related to income transfer, and its recessive effect.

The fourfold increase of oil prices meant an income transfer from oil-importing to oil-exporting countries of slightly more than two percent of the importing countries' gross product. Had OPEC spent the full amount of the increase registered in its income for imports from industrialized countries, the effect would not have gone beyond the transfer mentioned before and, to importing countries, the whole problem would have been reduced to the once-and-for-all loss of a portion of income recoverable with six months' normal economic growth.

But OPEC, due to its very low degree of industrial development, scarce population and very regressive distribution of income was unable to spend its increase of income. Thus, in 1974 a 60,000 million dollar trade deficit of oil-importing countries was generated. The consequences of this deficit were recession and a global loss of income which in 1975 led to a global fall in industrial production ranging from 10 to 30 percent as per different countries (1), that is, of a magnitude incomparably greater than the loss due to income transfer (2).

Note: (1) as from 10 percent in Germany up to 30 percent in Japan.

Note: (2) The analysis of and differentiation between the two effects were carried out by Chenery, H.B; Pollack, G.A; Solomon, R. (1974a and 1974b); Packer, A. Furthermore, Pollack and Solomon make it clear that the effects are alternative and not simultaneous. The income transfer proper, so as to materialize, calls for a delivery of goods. So, as long as there exists deficit, it remains postponed.

The mechanism of this recession is complicated and, therefore, it is advisable to analyze it by stages. Let us assume the first, most simplified, model of analysis in which all oil-importing countries are grouped in a sole country - "Importland" - which has a permanent trade deficit vis-a-vis another country, which is OPEC, and let us also assume that transactions are made in gold or in other international means of payment. If "Importland" does not take specific measures to reduce or to compensate its deficit, it gradually loses its reserves. Finally, it is forced to take some steps so as to balance its external sector. As the cause of its problem is not its own incapacity to export but the incapacity of OPEC to absorb more imports, the only thing it can do in order to restore equilibrium is to reduce its oil imports. Up to a certain extent it can resort to oil rationing. It can also resort to the substitution of imported oil by its own oil or by other energy sources. But these latter measures are partial and take time. The only immediate solution left is recession which makes energy consumption fall. The point of equilibrium is reached when recession is sufficiently deep so as to make "Importland's" oil imports decline to the level of "Importland's" exports OPEC is able to absorb.

The recession can be avoided if OPEC reinvests or lends its surplus to "Importland". In the same way as it occurs in UPS, "Importland" needs these funds not in their role of investment capital but as external means of payment or foreign exchange. The price it has to pay for them is also similar: cumulative financial indebtedness, if they are loans, or a progressive denationalization of its productive structure in the case of investments.

If, in the time gained, "Importland" manages to stimulate its "substitutive activities", that is, to develop alternate energy sources, thus making future oil imports decline, or if in the meantime OPEC raises its imports, the system tends to return to equilibrium. Loans become self-amortizable and the scheme "closes". If this is not achieved, the only thing "Importland" attains is to postpone the deficit at the cost of aggravating it and, finally, it will have to fall into a recession much deeper than the one which it wanted to avoid at first. In other words, in the first model "Importland" behaves vis-a-vis OPEC as a typical UPS does in front of the industrial world.

Now, let us shift to the second model, introducing two great advantages in favor of "Importland" which UPS do not enjoy. The first one is that virtually the whole financial system of the world - that is, all the great banks - is situated within its boundaries. OPEC needs this "safe deposit box" and even when it does not take any deliberate

decision as to invest or lend its surplus to "Importland", it actually does so by the mere fact of having it on deposit with the Western banks. (1) In other words, except for some physical filtration of the reserves to OPEC "safes", the whole trade deficit of "Importland" remains automatically reinvested financially in "Importland" itself. The operation takes the form of a simple transfer of funds among different accounts of the same Western banking system. Even the eventual filtrations can be compensated thanks to "Importland's" second great advantage which consists in its capacity to print international money - dollars or special drawing rights - with which it pays for the oil.

But the automatic return of OPEC surplus to "Importland" is not enough to avoid recession. Consumption declines due to the increased portion of income needed to pay for oil and its byproducts. So as to keep up the former level of aggregate demand, this fall in consumption should be compensated with an equivalent increase of investment. But this increase does not take place if the oil surplus remains immobilized in the bank accounts of OPEC holders. To begin with, it would thus be advisable to try to reduce this surplus by removing obstacles to OPEC's direct investments in "Importland", a benefit which of course should be weighed against the danger of denationalizing the productive structure. The productive recycling of the remaining surplus would become the responsibility of the banks. But their task would not be easy because the fall in the demand for consumer goods also does away with incentives to investment. In order to maintain full employment, a Keynesian policy of state investments based on a deliberate budget deficit would be needed, financed - either directly or indirectly - by the funds remaining in OPEC accounts.

Thus, in model number two, despite the deficit with the OPEC, it is possible to maintain full employment and growth for a substantially longer period than would be possible in model number one. However, the working of this model is based on the assumption that OPEC deposits its surplus in "Importland" so that the latter may continue buying oil, whereby the OPEC will have greater surpluses which it will deposit once again in "Importland" which, with this money, will buy again from OPEC and so on. As it can easily be seen, this process would wind up in a cumulative indebtedness which in a few years would exceed the total amount of the means of payment moving in the international circuit. Common sense says that this mechanism could not be sustained in the long run.

Note: (1) See Pollack, G.A; Solomon, R. (1974a and 1974b).

One can imagine several outcomes. For example, it is reasonable to assume that the tremendous financial power concentrated in the hands of OPEC would gradually give it an increasing political power over the financial institutions of "Importland". In this case, it would be logical to assume that OPEC would use this political power to protect the value of its monetary assets. This would mean a growing emphasis on policies aimed at monetary stabilization, with more and more obstacles to the reactivating measures which "Importland" would need so as to maintain full employment; it could also mean a change in the rules of the game of the international payment system as a result of which "Importland" would lose its capacity to create international money based on reserve currencies, at present automatically reinvested in its banking system. There are many weak links for a possible rupture of the process, but the only thing which can be taken for granted is that sooner or later it will come to an end, winding up in the final recessive situation of model one (1).

In practice, it is difficult to reach this final point of rupture, since another one appears much earlier, derived from model number three. This third model arises when we incorporate the fact that "Importland" is not a single country but a great number of countries which share the aggregate deficit with the OPEC.

In the ideal distribution of this aggregate deficit, each one of these countries would be left with its own oil deficit (2). But, in practice, some countries manage to reduce their deficits at their neighbors' expense and, sometimes, even to attain surpluses. In these cases, the neighbors - probably countries which already had balance of payments problems before the oil crisis - are left with greater deficits than those which they would normally have.

The situation looks like the game of musical chairs where there are nine chairs for ten participants. The "deficit" is not shared evenly.

Note: (1) The papers which are optimistic about the Western world's possibility to maintain growth despite the oil crisis, in order to justify such optimism, introduce the assumption that the deficit vis-a-vis OPEC will be diminishing as from the early 1980's. See Chenery, H.B. (1975).

Note: (2) OPEC, though it does not spend all it receives, does spend part of it. Thus, the "oil deficit" of each country is less than its own oil imports and its relation to them is the same as that existing between the aggregate deficit of "Importland" and its total oil imports.

Instead, each time when the music stops playing everybody runs to occupy a chair. Though it cannot be known who, it is sure that someone will be left standing. It will even happen that some players will occupy two chairs (that is, they will have surpluses) thus leaving more than one participant seatless.

If funds deposited or reinvested by OPEC were channeled in proportion to the resulting trade deficits, this inequality in the distribution of aggregate deficit would have no major importance. Individual balances of payments would be leveled via capital accounts and the situation could be likened to that of model two. However, things generally occur in the opposite way, since countries with less deficit are those which attract OPEC funds while those with higher deficit receive less.

In order to restore internal equilibrium within "Importland", it is necessary to recycle these funds at an international level, that is, to put into operation a mechanism through which banks of the countries receiving OPEC capitals would lend these funds to deficit-ridden countries. However, this recycling encounters great obstacles. As long as global deficit with the OPEC persists, it will be very difficult for countries with deficits to normalize their situation. At best, they may improve their situation through a trade war, leaving somebody without a "chair", that is, transferring their own deficit to some other country. Thus, to grant loans to countries with deficits is a very bad risk for private banks, which can hardly lend money knowing that the only possibilities to recover it are to grant the debtor new and greater loans or, at best, hoping that the latter succeeds in making delinquent some other debtor, probably of the same bank.

It can be objected that these criteria do not apply to the context of the new global situation. It is true that countries with deficit cannot repay their debts as long as aggregate deficit with the OPEC persists. But it is also true that, while OPEC does not think of another "safe deposit box" for its funds, the counterpart of this aggregate deficit will continue to be deposited with the banks of "Importland", automatically ensuring sufficient funds to finance itself (1).

But the above does not apply to each individual bank. When the Chase Manhattan Bank lends money, let us say, to Italy, to finance that

Note: (1) This argument was thoroughly developed by Solomon. See Solomon, R. (1974a and 1974b).

country's share of the global oil deficit, it will not suffice for the Chase to know that the financial counterpart of this share will be available within "Importland". Should OPEC come to withdraw its deposits so as to channel them to some other bank, Italy's inability to repay its debt would mean a serious danger to the individual stability of the Chase Manhattan as a bank. Therefore, so as to protect their own security, private banks - even when they have OPEC funds - will soon be forced to restrict credits to deficit-ridden countries. The result will be the appearance of countries with practically insoluble external bottlenecks, with unavoidable recessive consequences. These bottlenecks will also have a great inflationary potential for the individual countries, inasmuch as their governments will try to overcome them by means of devaluations and will be confronted by social resistance opposing the fall of popular income.

In order to finish our progressive approach to the real world, the last step remains which is to incorporate productive bottlenecks into model three. We thus come to model four of "Importland", the most complex of all, in which three types of bottlenecks coexist:

- a) bottlenecks at the productive level, that lead to world-wide inflation and limit production;
- b) global external bottleneck at the level of "Importland" with recessive consequences which, in the medium term - that is, as long as automatic reinvestment of OPEC funds is maintained - can be compensated by means of Keynesian policies.
- c) clearly recessive external bottlenecks of individual countries, with a great local inflationary potential.

The interaction of the three types of bottlenecks can be seen recalling what has happened in the real world.

4) Oil crisis in the real world

In the real world, the recession appeared as a result of the combined effect of the three types of bottlenecks. The first mechanism resulted from deliberate restrictive policies which many countries had started to put into practice in 1973 in order to cope with productive bottlenecks. When the first recessive effects of the oil bottleneck appeared at a global level, these explicitly restrictive measures ceased to be necessary; to depress demand it became sufficient to refuse to take Keynesian expansive measures required to maintain demand at the former level. This lack of expansive measures provided the second recessive mechanism. The third one was the effect of

individual bottlenecks. The OPEC funds were mostly channeled to the U.S. and to the financial Euro-market. Despite the ambitious U.S. proposal tending to create an international and inter-banking financial security net at a governmental level, the international recycling of these funds remained almost exclusively in the hands of private banks and it became more and more difficult as indebtedness increased. As a result, not only did external bottlenecks of the UPS grow worse but recessions also appeared in industrial countries faced with deficits. The countries affected by these recessions were forced to reduce their imports, thus affecting exports of other countries and propagating this third wave of recessive effects to them. Some of the affected countries, for example Germany and the U.S., having international reserves, could have neutralized this wave by Keynesian expansive policies, but they did not do so, once again because of the fear of reviving inflation.

As usual, the recession had a balancing effect on bottlenecks. In the first place, productive bottlenecks disappeared. The international prices of raw materials declined again due to lower demand and, fundamentally, the black market disappeared. In 1975, the rate of international inflation dropped to approximately six percent in countries with strong currencies, such as the U.S. and Germany.

At the same time, recession reduced the physical volume of oil imports. On the other hand, due to this drop in sales, OPEC called off the new nominal price increases it had projected, thus reducing oil prices by approximately 25 percent in real terms. All this, together with greater imports by OPEC in 1975 reduced the global oil deficit of "Importland" to approximately half of its former value, that is to about 30,000 million dollars.

In the meantime, internal struggle within "Importland" became increasingly acute with each country trying to displace the trade deficit to others. The main losers were the developing countries which, except for a minor portion that fell to COMECON in 1975, came to share nearly the full amount of Importland's joint deficit. This, added to growing difficulties to obtain refinancing, led them to deeper recessions than the usual ones and to even more violent devaluations-wages spirals of exchange inflation.

Industrial countries emerged with a small joint surplus. But this aggregate balance conceals great inequalities. For example, West Germany had a surplus of 15,000 dollars. Several industrial countries, in turn, became deficitary. Thus, Great Britain and Italy shared a joint trade deficit of more than 9,000 million dollars. Everything that happened in all the latter countries was very similar to the phenom-

ena familiar in UPS. First, an attitude of closing the eyes till the last moment to the external disequilibrium, trying to "cover it up" with loans. Second, when these credits become exhausted, attempts to solve the situation letting the exchange rates to float and thus giving rise to successive devaluations. Third, the weak balancing effect of these devaluations, in this case due to the weight of former indebtedness as well as to the contraction of imports of the other countries (either deliberate or "de facto", arising from the overall recessive situation). Fourth, a sharp rise in domestic prices due to the price increase of imports and, occasionally, to the "drag" effect of exportables. In the fifth place, drops in real wages and the appearance of social pressures tending to restore them, with resulting spirals of exchange inflation (with annual rates of 30 percent in Italy and of 15 percent in Great Britain by mid-1976). (1) In the sixth place, "anti-inflationary", which is to say, recessive, monetary and fiscal measures tending to depress production to a level compatible with the foreign exchange bottleneck. In the seventh place, rises in budget deficit as a result of the process (of 15 and 13 percent of GNP in Italy and in Great Britain, respectively).

This situation, similar to that prevailing in UPS, provokes an also similar reaction by foreign creditors who, so as to refinance and - eventually - to grant new loans, require that "the house be put in order", that is, they ask for recession and wage control (2).

By mid-1976 in several industrial countries, such as the U.S., Japan, Sweden, Italy, signs of a swift economic recovery appear. But some of them - as, for example, Italy - by no means solved the problem of foreign deficit and their expansion is based on some additional loans they were able to obtain. In consequence, their expansion will be very short-lived. Neither can recovery last much longer in apparently more favored countries. The twofold world problems which led to the former crisis continue to be unsolved. No world-wide program has been undertaken to accumulate foodstuffs and raw material reserves. Neither was there a generalized process of investments which would have allowed to eliminate bottlenecks in the transformation capacity of primary raw materials which made the 1973 inflation explode.

Note: (1) In an extensive summary of the situation in Italy, Guido Carli, ex-Central Bank chairman, identifies inflation in that country with Latin American devaluations-wages spirals. See Carli, G.

Note: (2) At the Puerto Rico meeting, by mid-1976, these conditions appeared at the level of heads of state thus evincing an important political division among industrial nations.

As far as the oil crisis is concerned, though certain relief can be expected on the basis of future oil from the North Sea, Alaska and Norway, no major progress was made towards independence in the field of energy production.

Thus, independently from the resurgence of some local recessions that will raise their head as global reactivation advances, one can expect the repetition of the whole process on a world-wide level. First, price rises in bottlenecked productive items. Simultaneously, an increase in oil deficit due to both greater physical volumes and higher prices. Third, apart from local inflations, a new inflation at international level, in terms of stronger currencies. Finally, a new world recession. Thus, everything seems to lead to world-wide inflationary-recessive cycles of a "stop-and-go" nature originated in internal and external bottlenecks up to now typical of UPS.

5) The solutions

The normalization of world economy calls for the removal of the presently existing three types of bottlenecks. To start with, solution of the problem of critical supplies requires a concentrated social effort to do away with bottlenecks, similar to that shown by the U.S. during World War II in the field of the armaments industry. This calls for investments stimulated by governments at an international level, according to a global plan. It also calls for stabilizing reserve funds for the most important foodstuffs and extractive raw materials, including industrial raw materials in slowly maturing lines, where market signals come too late to orient investments and to prevent bottlenecks. The aim of these stabilizing funds would be to avoid excessive price rises as well as to encourage investment, maintaining a constant level of demand and preventing excessive drops in prices. (1)

Note: (1) It would be simpler to leave the commodity stabilization to the private sector. But private investments have always a profit motive and they call for a reasonable capacity to forecast future five to ten years ahead, a term comparable with the time required for capital intensive investments to mature. This future is not predictable on the basis of the rules of the game existing today. It depends on constant changes in these rules emerging through the complex interaction which operates at governmental levels among different countries. Thus, stabilizing investments can hardly be made by the private sector in the amounts and with the anticipation required. Governments, as the protagonists of the process of

Once productive bottlenecks are taken care of, it becomes necessary to deal with the internal balance of payments within "Importland". This means a more equitable distribution of the aggregate deficit, removing non-oil deficits, and solving the recycling problem.

In the first place, a rule of the game is necessary which would force oil importing countries with surpluses to undertake expansive domestic policies in order to spend them. In the second place, equilibrium within "Importland" requires that the chronic non-oil external bottlenecks of the UPS which integrate it be eliminated by methods already outlined in section two. In the third place, it is necessary also to eliminate non-oil trade deficits in some industrial countries - for example, in Italy and in Great Britain - where the conflict between external equilibrium and income distribution is so acute as to sterilize the necessary modifications in exchange rate by means of spirals of exchange inflation. In these countries some of the compatibilizing guidelines proposed for UPS may be applicable concretely, marginal incentives to exports and to import substitution by means of a combination of exchange and tax instruments.

In the present context of "everybody for himself" within "Importland", unilateral measures tending to remove deficit in a sole country will be perceived as an attempt against the external equilibrium of the others and will be resisted. But if the rule is adopted whereby each country must remain with its own oil deficit and with nothing more than this deficit, the context of "everybody for himself" would disappear. As from this point onwards, the only concern of the international community would be to see to it that no country reduced its trade deficit below its corresponding share of joint oil deficit (and, obviously, that it did not accumulate surpluses), thus thwarting the previous goal. But it would not have to worry about the methods each country utilizes to regulate its foreign trade. In the same way as today it is admissible to reduce imports by means of a recession, in the future each country should be free to utilize a more appropriate combination of instruments so as to make its external equilibrium compatible with full employment and a desired distribution of income. The fundamental restriction would be to respect global equilibrium. The exceptions would be those selective exchange measures which, due

/// creation of new rules of the game, have more chance to forecast the future and to act accordingly. But even if it were not so, their motive is not a specific profit but the social benefit derived from economic stability. Therefore, they are in a better position to face the risk of eventual errors of prediction with respect to the future development of specific markets.

to their negative sectorial impacts, should be subject to additional negotiations.

As to the problem of recycling, it is indispensable to create an international security net which would group the great world banks in a single super-institution co-responsible for oil deposits and loans, backed by the explicit and deliberate intervention of all governments and, thus, immune to eventual and unexpected interbank and international movements of OPEC funds within "Importland".

The measures outlined so far, complemented by a greater international liquidity brought about by the increasing role of drawing rights, would lead us back to "Importland", model II: without productive bottlenecks, without internal disequilibria of payments, but still dependent on refinancing by OPEC. But - as it was emphasized - neither is this model stable in the long run.

Thus, the last step in the conceptual sequence (but simultaneous in reality) must be an intense international program of substitution of OPEC oil by oil, coal and other power sources of "Importland", giving this effort maximum priority. The objective would be to attain energy substitution at the lowest possible cost but without being held up if this cost turns out to be higher than the price of OPEC oil.

Importland's global bottleneck with the OPEC, which at present can be eliminated by financial means, if positive measures are not taken, will finally end in a recession whose resulting global economic cost will be much greater than the magnitude of the bottleneck in itself. Let us recall that the cost of the last recession was a 10 to 30 percent fall in industrial production added to the cumulative loss from the reduced growth rate. In turn, the whole direct cost of higher oil prices does not exceed two percent of the product and it is not cumulative. Therefore, in the same way as it occurs in UPS, priority should be given to removing the bottleneck, even at the cost of paying more for the scarce item.

To conclude, it is convenient to point out that a global investment plan intending to eliminate productive bottlenecks, to create stabilizing reserve funds and to achieve energy substitution fits in perfectly with the existence of oil-fund surpluses in "Importland" banks which call for a deliberate Keynesian investment promotion policy.

6) Once more the blocking role of the paradigm

Most of the solutions outlined in this paper were already proposed on some occasions and at some international forum and they run into

political difficulties. They seemingly imply a much higher degree of foresight, decision, lucidity and solidarity than governments have proved to have. However, in defense of these governments we must stress the difficulties they are faced with. The reforms called for are complex, they affect vested interests, involve important modifications in existing institutions, alter established hierarchies and - above all - they imply learning to think in a different way. Therefore, they can only be carried out if there is a strong political pressure on the governments which, in turn, calls for a high degree of public awareness of the causes of the crises and of the real alternatives in case they are not eliminated.

But the intuitive perception of bottlenecks by public opinion, very weak in itself, is limited to their acute phase, when they become openly manifest as shortages, localized rises in prices or as the drainage of international reserves. Once the usual inflationary-recessive phenomenon has been induced and demand adjusts to supply, the bottlenecks apparently disappear and public attention becomes focused on recession. As from this point on, only an appropriate analysis allows to discover that this disappearance is apparent and that bottlenecks continue to exist, under cover, as causes of the crisis. But here we return again to the blocking role of both populist demagoguery, with its own distributive paradigm, and of the traditional paradigm which together prevent public awareness of the real causes of crisis.

The issues and events related to the world crisis are very notorious and very close to the main idea-elaborating centers. For this reason the gap between ideas and reality is not as wide as in UPS. In the latter, an economist may well graduate without even having learnt about the fact that he lives in an unconventional productive structure. A North American economist, in turn, will hardly receive an academic degree without having learnt about the existence of the oil crisis. In contrast to the unbalanced productive structure, which is considered "pathological", the oil bottleneck as well as the other bottlenecks are investigated and analyzed in depth by specialists and these contributions have influence at the intellectual level.

Nevertheless, the paradigm maintains its defenses and refuses to integrate these new facts. The analytical contributions referring to bottlenecks seem to move in a viscous medium. As they move away from the specific compartment of economics which elaborated them, they collide with the resistance of the paradigm, turning into exceptions, temporary deviations, particular cases and pathological phenomena. Significant contributions, which should cause a revolution in the rest of economics, end up as short mentions or footnotes in the most

advanced treatises, and do not even appear in textbooks or at the level of mass communications media. (1) For example, the "bottleneck" inflation has been analyzed by several authors (2) under the name of "commodity inflation" and even in this case its description was published in mass communications media (3). However, these contributions are very slow in becoming integrated in economic treatises and papers of a more general nature (4) most of which, though they may mention bottlenecks as one of the causes of inflation, right afterwards tend to move on to the conventional analysis of inflation, either in terms of a global excess or demand or of the cost-push variety (5).

It is even more difficult to find any analysis which would integrate the subject of inflation with external bottlenecks. This is not surprising, since the whole topic of international payments is very little integrated with the rest of economics. Already before the oil crisis, though many specialists in international payments were showing a clear knowledge of the restriction imposed on monetary and fiscal policies and on the level of employment by fixed exchange rates, once recessions have been unleashed, the topic moved out of their jurisdiction to that of the macro-economists. But in the education and training of macro-economists there is an implicit assumption either of a balance of payments equilibrium, or of a temporary disequilibrium, which can easily be solved by the adequate management of exchange rates. The most elemental textbooks directly postulate a closed economy, without external sector. Although the more sophisticated ones make an attempt to integrate the external and internal sectors, they do it assimilating exports to investment and imports to saving. The model thus arrived at allows the possibility

Note: (1) As to the role of the emphasis on the spreading of ideas, see De Pablo, J.C. (1972).

Note: (2) Nordhaus and Shoven, already cited; Bosworth, already cited.

Note: (3) See Tobin, J.

Note: (4) For a very interesting work of integration, which reflects the thinking of the Scandinavian school and also tries to incorporate as an endogenous variable, the behavior of the governments, see Lindbeck, A.

Note: (5) This lack of integration of the bottlenecks is common to the orthodox official line and to its radical critics. See this latter in Crotty, J; and Rapping, L.A.

of recessions originating in the external sector but the assumed equivalence between exports and investments and between imports and saving implies that this effect can always be compensated by the government through domestic expansive monetary and fiscal policies. An insurmountable external limitation immune to domestic policies does not appear in the model.

Due to this education by compartments, the habit of thought which ignores external limitation is born, to such an extent, that even in countries undergoing an acute external crisis, this limitation only gives rise to a marginal mention in economic analyses, after which the level of employment comes to be discussed in terms of the monetary and fiscal policies in force and of their inflationary effect (1); foreign trade is analyzed in terms of static efficiency; income distribution is investigated in terms of historical series - all this as if the problem of balance of payments did not exist.

Grave imprecisions also persist in economic thought concerning the problem of payments proper. In view of the practical difficulty to restore external equilibrium via devaluations - due to conflicting objectives with the stability of reserve currencies, or income distribution or, also due to the aggregate oil deficit - certain schemes have been postulated which purport to overcome external bottlenecks with a permanent inflow of foreign capital, stimulated by means of an appropriate blend of monetary and fiscal policies. Thus, the remedy of foreign capital, suitable for temporary disequilibria, is extended to permanent ones, without taking into account the qualitative change this extension implies, that is, the cumulative and explosive nature of the process of indebtedness and the unavoidable "stop-and-go" cycles it leads to (2).

Note: (1) A good example is given by a compilation of works by Champerowne, Harrod, Lerner, Reddaway, Samuelson, etc., in which oscillations in the level of employment in three decades after Keynes are discussed without taking into account the balance of payments or, at most, by mentioning it in a very superficial way. See Lekachman, R. (1967). In this field there was a marked retreat. In the works of M. Kalecki, already cited, which date back some 40 years, there exists an incomparably higher level of integration.

Note: (2) See the schemes proposed by Mundell and their criticism by De Pablo for the case of UPS, applicable also to a more general context. Also the analysis by Marina Whitman and the ensuing debate. See Mundell, R.A.; De Pablo, J.C. (1976); Whitman, M.

All of the above has a great negative impact on the perception of the oil crisis. In spite of solid analytical works on the subject in general, here again the lack of perception regarding the long-term limitations of balancing capital inflows leads to an over-estimation of the recycling possibilities (1). The absence of a habit to reason in terms of an external limitation leads to under-estimation of the gravity of the whole global oil disequilibrium. Finally, because of the compartmentalized approach the recessive results, once they have arisen, tend to be dissociated from their original cause.

As a result of all this, when issues related to the crises of payment system - either of reserve currencies or of oil - reach the level of mass communications media, the interpretation in terms of the external bottleneck generally disappears so as to be replaced by a sterile discussion in terms of the dilemmæ between recession and inflation or between market forces and state interventionism. At the level of public opinion, disorientation is very similar to that prevailing in UPS. Budget deficits, induced by recessive inflation, are mistaken for the causes of inflation. Specialized magazines, with a blind spot in perception, are unable to handle the concept of bottleneck and they are near to despair in their fruitless attempts to explain why today it is impossible to make full employment compatible with reasonable price stability. Governments appeal to the electorate's sense of responsibility, asking people to endure recession so as to avoid inflation, but without explaining its causes and without showing the possible economic policy alternatives.

In the field of the oil crisis the difference between the direct effect of the fall of incomes because of price increases and the indirect recessive effect is not understood. Therefore, the proposals

Note: (1) In a well-known work on the subject of the oil crisis signed by five international specialists, some advance is made with respect to the usual interpretations. The authors prove that an infinite refinancing of the deficits with OPEC loans and capitals is impossible if these funds (or time gained) do not contribute to solve the deficit which made them necessary. But confusion, instead of disappearing, just changes its level, since as a solution there appears the channeling of the funds lent or invested towards an increase in the export capacity of the countries with deficits, as if global imbalance vis-a-vis OPEC were originated in the insufficiency of export capacity and not in the global limitation of imports by OPEC. See Farmanfarmaian, G; Okita, R; and others.

to overcome the oil crisis by means of energy substitution, which lead to even higher prices, seem to be absurd and do not gain political support. In addition, they run into the euphoric reaction of those who, on seeing the recession-induced reduction of the oil deficit in 1975 claim that the initial forecasts about the real scope of the oil problem, were excessively alarmist. In the meantime, in statements made by prominent bankers and top-ranking government officials the destiny of countries which lose in the "who will take the deficit" game is attributed to their incapacity to keep their house in order, etc. This generalized disorientation is by no means the most suitable way to mobilize political backing for the international reforms.

The world economy is undergoing a deep crisis. Contrary to what is contended by Marxists, this crisis does not originate in the inevitable failures of the capitalist system. Neither is it limited to this system: COMECON countries increasingly participate in it. The crisis originates in institutional, political and ideological obstacles which prevent the understanding of the real functioning of the industrial system and its adequation to existing bottlenecks. Modification of the economic paradigm in itself would not suffice to ensure that this adequation take place. But it would open the way for a growing public awareness of the problems and a mounting social pressure upon the governments which could impel the change. Therefore, without being a sufficient condition, it is a necessary condition to any solution.

Moreover, so far the bottlenecks have been of an institutional nature. But on the horizon the future problems of a finite world can already be envisaged with exhaustion of natural resources and environmental pollution - bottlenecks of a physical nature, much more difficult to overcome than the present ones and with an infinitely greater potential of social and international conflicts.

The response to this new and next challenge will call for a greater-than-ever concentration of social effort, so as to be able to cope with shortages as soon as they arise, with a level of planning, governmental and private cooperation and international coordination as yet unheard of.

The present paradigm, whose main task apparently does not consist in orienting social efforts but in making problems cloudy and confused, does not provide the intellectual climate needed to support this response. Therefore, it is doubly important to change it.

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