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The Main Streams of the World Economy

WHEN future historians describe the large epochs of the world economy they are likely to find the 1960s to be the turning point of a new era. Both the old and the new era will be characterized by the two key words of industrialization: specialization and integration. But if the old era was dominated by horizontal specialization of homogeneous products between countries, the main feature of the new one is vertical specialization of production processes and heterogeneous, quality-differentiated goods. By the same token, integration in the old era took the form of colonialism, securing regular deliveries of primary products and markets of standard manufactures. Integration in the new era is best described by two key phenomena: common markets and multinational corporations, the one ensuring large enough markets for cheap mass sales and the other mastering an optimal allocation of processes for mass production according to cost and quality criteria.

At the peak of the colonial era the world was practically partitioned amongst about 10 colonial powers, all organized similarly with trade and capital flowing mainly between the colonies and their mother countries. As a consequence of higher sophistication in manufacturing and increased variety in quality, trade was slowly directed towards two-way flows of similar goods between industrially advanced countries, especially after the Second World War. The colonies gradually lost their relative role as markets. This might in fact be a more important reason for the mother countries to show weak resistance against the liberation movements rather than their respect for a human right of the colonies to become independent nations.

The 1950s and 1960s represent the peak of the splitting up of the world into new states (above 150 at present), but in the apparently chaotic atomization can already be discerned new crystal structures. By trying to define them, important conclusions about the future world economy can be drawn. Before doing so, some evidence of the new characteristics of specialization shall be brought out.

* U.N.C.T.A.D. The views expressed in this paper are exclusively those of the author and are not necessarily representative of the organization for which he works.

SOME CHARACTERISTICS OF VERTICAL SPECIALIZATION

In a study by E.C.E. about industrial development in Europe in the 1950s and 1960s,* it was found that there has been a tendency towards a greater similarity in production structure among the European countries. This indicates a move towards less specialization. At the same time foreign trade of industrial goods as a proportion of production accelerated. The explanation of this apparent paradox is that the expansion of trade refers to exchange of different qualities of the same goods and to trade with goods in different processing stages within each industry. Motor-cars offer an excellent example, where up to 70 per cent of the whole production of a factory and even 100 per cent of an individual model can be exported and yet the total domestic production of cars might be near to the total sales in the country. Sweden exports about 70 per cent of the value added of its industry and yet the net trade of manufactures is less than 5 per cent of production. The trade of manufactured goods between the developed market economies increased in volume during 1955–70 by 10·5 per cent per year, whereas the manufacturing industry in these countries grew by 5·1 per cent per year.

The economic theory for the new type of specialization now spreading all over the world is not yet very well developed, but it is possible to distinguish at least some important elements in the economic forces at work. One element is that the increased efficiency in transport together with relative high value of the manufactures per unit of weight makes the unit transport costs, even over long distances, small relative to existing differentials in unit costs for the same product or quality. Another element is that wage differentials for the same skill are large in the world context. With modern training methods costs of establishing a certain highly specialized (but narrow) skill are often small compared to the increase in productivity following from the skilling. A third element is that in manufacturing, the technical specification of a process can be made so detailed and so well controlled by instruments that the process can be established anywhere with the help of some experts.

The strong competition which rules the market of mass goods has been obliging enterprises to locate production and production processes where they are cheapest. In labour-intensive operations the search for low-cost labour has been especially intensive. This has led to a spill-over to developing countries of establishing manufacturing export industries. Over the last decade, the value of exports of manufactures has in fact risen faster in the developing countries than in the developed, by 14 per cent per year compared to 11 per cent. Compared to the exports of food and raw materials, the expansion in manufactures represents a growth rate two to three times faster. Some developing countries have in the last few years noted rates of 30 per cent or more in the growth of their manufacturing exports. Up to now there are, however, only between 10 and 20 countries having the important advantage of this development and the manufactures

* E.C.E. *Economic Survey of Europe in 1970*, Part I.

account for less than 20 per cent of the developing countries' total exports. But, if the trend continues and there is a lot to indicate that it will, the exports of developing countries might in one to two decades consist of more than 50 per cent of manufactures.

It is not only among the market economies that the new type of specialization is taking place. The socialist countries also have entered this phase. In their vocabulary it is called industrial co-operation. The specialization is arranged in a planned way, the establishing of industries, or industrial processes, trade and financing mostly co-ordinated by inter-state agreements, bilaterally or in the context of C.M.E.A. even multilaterally. Also developing countries are included in such arrangements. In fact, it is the same economic forces which drive the more industrialized socialist countries to seek industrial co-operation with developing countries as drive industries in the developed market economies to expand internationally.

INTEGRATION AT MICRO AND MACRO LEVEL

Closely linked with the new type of international specialization are new types of integration, at the enterprise level the multinational corporation and, at the state level, economic groupings. A decade ago the phrase 'multinational corporation' had not even been coined. Today the sales of the multinational firms outside their own countries exceed total world trade, approaching 400 billion dollars. There are estimates suggesting that these corporations control more than 15 per cent of total world industrial production. Although their national sales (domestically and abroad) are likely to dominate, a growing proportion of world trade takes place as internal trade within the multinational enterprises. It has been estimated that 40 per cent of manufacturing exports from Latin America come from United States subsidiaries. One-third of the developing countries' exports consists of petroleum which is mostly traded under such conditions.

This development has important repercussions on the statistical and economic interpretation of international trade and financial flows. To illustrate, it is well known that the petroleum price, registered in international trade, is practically meaningless, being only an accounting price for transactions within the oil companies. Similarly, the oil companies can take home their profits either by income payment transfers or by a low posted price on the petroleum. In the short run payments can easily be converted to credits or advanced according to the temporary needs or with the purpose to profit or avoid losses from exchange-rate changes and other international monetary activities.

Already the flexibility of the multinational enterprises in changing type and size of their international financial flows is likely to have had an impact on the present monetary crisis. Taking into account their fast increasing role, any further efficient international monetary system has to be able to cope with this flexibility, implying a vastly increased power of currency speculation. I would dare to say that in one decade or so the role of the multinational corporation in international transactions might be so

strong that the pursuance of pure national economic and fiscal policy will become impossible.

ECONOMIC GROUPINGS

Economic integration among states works, of course, in the same direction. It is well known that the main objective of the European Common Market was to gain from the economic advantages of specialization in the big market and at the same time achieve through this specialization such an interdependence that national policies, especially for warfare purposes, would become impossible. The impatient may say that after fifteen years the Common Market is still in its initial phase, but the fact that three more countries have entered the Community is evidence of its progress.

At present one might discern five major economic blocks, formal or informal: E.E.C., C.M.E.A., the United States and Canada (and, more loosely, Japan, South Korea, Taiwan and some Central American countries), China with some neighbours and L.A.F.T.A. In the rest of the world there are integration efforts going on, either regionally as among the Arab states, in South East Asia and in Central America, or in seeking associations with existing blocks as is the case of many African countries. One would therefore be tempted to predict that in one decade or so the world will be completely partitioned into economic blocks, within each of which vertical specialization would be the ruler and the states and their politicians obedient servants.

The reason for such a partitioning would be that each of these blocks is big enough to allow for all advantages of scale. They are also supported by differences in economic ideology. Further intra-trade has a tendency to increase faster than external trade, due to the economic and social arrangements such as the removal of trade obstacles within the groupings and harmonizing the social welfare systems.

However, intra-trade might not increase faster than external trade mainly consisting of manufactured goods. Although the intra-trade of E.E.C. has increased faster than its total external trade and now covers about half of the total trade, the intra-trade rate of growth (in value terms) is about the same as for E.E.C. exports to North America and Japan (see Table 1*). Despite all efforts to strengthen co-operation within C.M.E.A. the intra-trade of the socialist countries of Eastern Europe has grown somewhat slower than the external trade. It is often stressed that there is a strong trade relationship between Japan and the United States, but the impressive Japanese export growth rates apply to most other markets as well.

* Due to the great work involved in establishing complete trade matrices, Table 1 contains some simplifications. To illustrate the enlargement of the Common Market, United Kingdom trade is included in E.E.C. in 1970. The addition of Ireland and Denmark would only affect the figures by a few percentage points. Neither the economic groupings among developing countries nor the association of such countries to economic groupings among developed countries are shown.

TABLE 1. *Trade flows in 1961 and 1970*

Destination / Origin / Year		North America	E.E.C.	Japan	Developing	C.M.E.A.[3]	All other	Total	Intra trade as % of total	Distribution of exports
		Billions of U.S. dollars							Per cent	
North America	1961	7·0	4·6	2·0	7·8	0·3	4·9	26·6	26·3	19·9
	1970	19·7	13·5[1]	5·4	14·1	0·7	5·9	59·3	33·2	19·0
E.E.C.	1961	2·5	11·9	0·3	6·7	1·1	9·8	32·3	36·8	24·1
	1970[1]	10·3	51·2	1·4	16·0	3·7	25·3	107·9	47·5	34·4
Japan	1961	1·2	0·2	—	2·2	0·1	0·5	4·2	—	3·1
	1970	6·6	1·8[1]	—	7·7	0·4	2·8	19·3	—	6·2
Developing countries	1961	6·2	6·4	1·6	6·1	1·2	6·2	27·8	21·9	20·8
	1970	11·1	20·1[1]	6·2	11·2	2·2	4·2	55·0	20·4	17·6
C.M.E.A.[3]	1961	0·1	1·1	0·1	1·6	9·0	2·2	14·1	63·8	10·5
	1970	0·3	3·1[1]	0·5	3·9	18·5	4·3	30·6	60·5	9·8
All other	1961	3·1	6·6	0·9	6·1	2·1	10·1	28·9	35·0	21·6
	1970	3·4	14·3[1]	2·2	5·6	3·3	11·8	40·6	29·1	13·0
World	1961	20·1	30·8	4·9	30·5	13·8	33·7	133·8	20·9[2]	100·0
	1970	51·4	104·0[1]	15·7	58·5	28·8	54·3	312·7	28·6[2]	100·0
		Annual percentage change 1961–70								
North America		12	13	12	7	11	2	9		
E.E.C.		17	18	19	10	14	11	14		
Japan		21	28	—	15	17	21	18		
Developing countries		18	14	16	7	+7	−4	8		
C.M.E.A.[3]		13	12	20	10	8	8	9		
All other		1	9	10	−1	5	2	4		
World		11	14	14	8	9	6	10		

Source: United Nations—*Handbook of International Trade and Development Statistics*, 1972.

[1] Including the United Kingdom.

[2] Including intra trade of North America, E.E.C. and Socialist Countries of Eastern Europe.

[3] Includes Socialist Countries of Eastern Europe.

FORCES WEAKENING ECONOMIC GROUPINGS

The big question is, then, whether the political forces at work in establishing economic groupings are strong enough to compartmentalize the world in the fashion indicated above. The multinational firms do not, for example, confine themselves to such a concept, but are ready to establish subsidiaries wherever economic advantages can be found. They hesitate only in case of extreme political instability. They find means even to penetrate into socialist countries and get support from governments. The establishing of a motor-car industry in the Soviet Union in collaboration with an Italian factory and the plans for common exploitation by the United States and the Soviet Union of natural gas in Siberia are only examples showing the top of an iceberg containing a great number of co-operative activities between market and planned economies. The aggressivity the Eastern European countries demonstrate against the trade barriers around the Common Market is nothing other than a sign of great interest in intensified East–West trade.

The strength of the economic groupings is, of course, highly dependent on the barriers surrounding them. By lowering these barriers the glue holding the member countries together in a common market is dissolving. The eagerness the United States of America shows in launching a zero tariff approach in the new so-called Nixon Round is no doubt dictated by their interest to weaken the Common Market and re-establish their role as exporters on the Western European Market. At the same time such an approach, if successful, will reduce the protection of the United States' own market, because of the concessions the United States will be obliged to give.

In summary, there are several economic and political forces working against a strong new partitioning of the world according to the principle of vertical specialization. Whether they will be forceful enough to immaterialize the present tendency to compartmentalize the world into economic groupings is a question I leave open for discussion.

FOOD AND AGRICULTURE

How does the food and agricultural problem fit into this picture? First, we might remind ourselves that the principle of specialization between agricultural and industrial economies received its apparently irrevocable death blow in the crisis of the 1930s by the separation of the food price level in the industrial economies from the world market level. Despite all talk about the costs of agricultural protection in the form of losses of efficiency both in the protected and unprotected countries, the separation has grown stronger. It is now more a rule than an exception that prices paid to protected domestic producers amount to double the price to the world market price taker.

The developing countries are desperately requesting a greater market

access for their main products and the developed agricultural exporters are increasingly worried by the shrinking of their traditional markets. The slow increase in demand for food, amounting to not much more than the population growth rate (about 1 per cent per year) makes it practically unavoidable that productivity in protected agriculture rises faster than demand, unless resources are moving out of the sector. Both past trends and projections made (by for example F.A.O.*) indicate growing self-sufficiency or surpluses. Any effort to reverse this tendency imposes greater pressure on the moving out of resources and aggravates the adjustment problems, often regarded as serious even without such a reversal. As the only efficient means of accelerating the push of resources out of agriculture is through lower price support, affecting the income of unadaptable farmers negatively, it is not surprising that the resistance by the farmer lobby is violent against such a policy.

On the other hand the population growth in the developing countries is so rapid (about 2·8 per cent per year) that the dominating subsistence production has difficulties in keeping in line. The commercial sector, normally directed towards exports, suffers from low world market prices, keeping down the profitability of using yield-increasing inputs. The observation of slow growth in developing countries is none the less used in the argumentation for the necessity of keeping large production in protected developed countries, mostly overlooking the role of the immense price distortion. A major argument used is lack of technical knowledge, but it is then forgotten that this lack is partly a function of price and that commercialization of a subsistence sector is strongly stimulated by high prices.

Thus, a statistical picture appears of food trade which deviates completely from manufacturing trade. The volume of world food trade has grown at about the same rate as the world food production (about 3 per cent per year). The protectionist developed economies have shown the highest food export growth rate, the non-protectionist ones follow thereafter and the developing countries come last (see Table 2†). The latter's exports have even grown slower than their imports, indicating decreasing self-sufficiency or, rather, a loss of their earlier export surplus. An improvement in their situation took place in the latter half of the 1960s, often explained by reference to the Green Revolution, but the first two years of the 1970s seem to mark a reversal to the earlier trend.

The drastic effect of the price distortion through protectionism is well demonstrated by F.A.O. This organization advocates that a necessary and feasible goal of increasing food production by 4 per cent per year requires increased market access to the developed countries to a value of several billion dollars. At the same time its projections at constant policies make a probable growth rate of a little above 3 per cent per year, associated with a similar rate of trade growth. What might in practice be feared is,

* F.A.O.: *Agricultural Commodity Projections*, 1970–80, Rome 1971.
† Table 2 shows the growth rates in value terms.

TABLE 2. *Trade of food and feed 1955–69 for major groups of countries*[1]

	Exports			Imports			Net trade[3]	
	1955	1962	1969	1955	1962	1969	1955	1969
	Billion U.S. dollars							
Developed market economies	10·0	14·8	23·2	14·8	19·0	29·0	−4·8	−5·8
Low-cost producers[2]	5·7	8·6	11·1	4·4	5·2	7·4	+1·3	+3·7
United Kingdom	0·5	0·6	1·0	3·6	4·0	4·3	−3·1	−3·3
High-cost producers	3·8	5·6	11·1	6·8	9·8	17·3	−3·0	−6·2
Developing countries	8·6	9·6	13·1	3·8	5·1	7·5	+4·8	+5·6
Africa	2·2	2·5	3·3	0·9	1·3	1·5	+1·3	+1·8
West Asia	0·2	0·3	0·5	0·4	0·6	1·0	−0·2	−0·4
India, Indonesia, Pakistan	0·6	0·7	0·7	0·3	0·6	0·7	+0·3	+0·0
Other Asia	1·5	1·7	2·3	1·1	1·3	2·5	+0·4	−0·0
Latin America	3·9	4·0	5·8	1·0	1·0	1·4	+2·9	+4·4
Socialist countries	1·8	2·6	4·3	1·7	2·8	3·7	+0·1	+0·6
U.S.S.R.	0·5	1·0	1·2	0·7	0·8	1·3	−0·2	−0·0
Others	1·3	1·6	3·1	1·0	2·0	2·4	+0·3	+0·6
World total	20·4	27·0	40·6	20·3	26·9	40·2	+0·1[4]	+0·4[4]

	Growth rates					
	1955–62	1962–69	1955–69	1955–62	1962–69	1955–69
	Exports			Imports		
	Percentage per year					
Developed market economies	5·9	6·6	6·3	3·6	6·2	4·9
Low-cost producers	6·1	3·8	4·9	2·3	5·2	3·8
United Kingdom	3·5	7·0	5·2	1·5	1·0	1·2
High-cost producers	5·9	10·2	8·0	5·3	8·5	6·9
Developing Countries	1·5	4·6	3·0	4·4	5·6	5·0
Africa	2·2	3·9	3·1	6·2	1·8	4·0
West Asia	6·0	7·6	6·8	4·8	7·2	6·0
India, Indonesia, Pakistan	2·9	–0·5	1·2	11·2	1·8	6·4
Other Asia	1·4	4·5	2·9	3·3	8·9	6·1
Latin America	0·5	5·5	2·9	0·3	5·4	2·9
Socialist countries	5·4	7·4	6·4	7·6	4·1	5·9
U.S.S.R.	11·5	3·1	7·2	2·2	7·0	4·6
Others	2·8	9·5	6·1	10·4	2·8	6·6
World total	4·1	6·0	5·1	4·1	5·9	5·0

[1] Includes S.I.T.C. 0, 1, 22 and 4.

[2] United States of America, Canada, Australia, New Zealand, South Africa, Denmark and Ireland.

[3] Net exports = +, net imports = –.

[4] Balance errors due to discrepancies in the statistical sources.

Source: U.N. statistics compiled by the U.N.C.T.A.D. secretariat.

however, a growing price distortion, with relatively higher protection. This will impair the growth rates to an even higher degree. The pessimistic, but unfortunately likely, projection is therefore that the *per capita* food supply in developing countries will not improve.

OBSTACLES TO VERTICAL SPECIALIZATION IN FOOD

Not only has protectionism in agriculture thwarted the horizontal type of international specialization, but also seriously hampered the development of the vertical type. The food-processing industry has been obliged to use domestic raw foodstuffs, whatever quality was available. This means that it has had to adjust its capacity and assortment to the size and composition of domestic demand. As a corollary the exchange on the world market of food of different qualities has remained small and the incentive to improve food qualities for international sales has been negligible.

The strength of the economic forces creating vertical specialization is, however, demonstrated by the ability of the multinational corporations to establish their subsidiaries even in heavily protected markets. It is true that their mother countries have in most cases been relatively liberal (such as the United States and the United Kingdom) or their original products have appeared in relatively liberal sectors (such as in the chocolate industry), but even so, their performance is quite impressive. The immediate question arising is then: will they in the future be so strong that they might contribute to a liberalization of the food sector? When looking at their behaviour so far, it is clear that they represent an important pressure group for this purpose, but the results of their efforts are mostly limited, such as achieving reimbursement of duties on raw foodstuff inputs used in the production process. In fact, their ability to find 'holes' in the protection walls, obliging governments to fill these holes by new regulations, is more impressive than their efforts to reduce protection. The strong reaction in Europe against the so-called imitation products, threatening the market of the 'normal' domestic products, is in this context typical.

The multinational corporation has entered the food sector at three levels, in the processing industry, in distribution by multinational chain-stores and in the catering industry, mainly by international hotel chains. The institutional set-up is quite varied, from centrally managed enterprises like Holiday Inn to limited agreements on product specialization and distribution, such as in the case of the consumer co-operatives. I think it would be worth while to undertake broad scope studies on the character, size and growth of multinational corporations in the food sector. These might tell us a lot of new economic and political forces entering a sector, hitherto mainly dominated by the primary producers' interest.

VERTICAL SPECIALIZATION AND INFLATION

In 1968 a new feature in the world price formation appeared: world

market inflation. Up to this year inflation was a domestic phenomenon, the world market price level remaining practically constant. It might be too early to state that world market inflation has come to stay and to establish its real causes. Nevertheless I would forward the argument that this new element is an integral part of the new structure of world trade following from the internationalization of production. In case of excess demand on the domestic market the multinational corporation as well as improved international business contacts in general immediately pass this excess on to the world market. This explains why the imports of manufactured goods continued to grow at high rates in 1970 and 1971, when industrial production slowed down in many developed market economies. As the supply response to the world market demand might be as slow as to the domestic demand, price inflation is occurring also on the world market.

The effect of a recession in production is, however, different in the case of inputs, such as raw materials. In a stagflationary period the prices of these goods tend even to fall. For primary producing countries, this tendency leads to losses in terms of trade, obliging them to devalue after some time. Of course, in a subsequent period of upsurge in production the prices of raw materials may again rise and the earlier losses might be regained. The experience is, however, that in a continuous inflation the primary producer tends on the whole to lose, unless he is well organized.

Inflation domestically is often a method to overcome rigidities which in an economy at stable prices would create stagnation. One might therefore conclude that the new specialization era not only has introduced by itself a greater flexibility in the allocation of world production resources but also through its economic effects, such as inflation, further contributes to this flexibility. The present monetary crisis and its imposition of frequent exchange-rate changes on most governments demonstrates the battle going on between the new economic forces and the economic thinking based on the old concepts of international economic relationships. We economists have the responsibility not only to look at the battle, but also to introduce new weapons to be used for its successful outcome, that is to achieve fast economic growth and a more equitable income distribution in the world.

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In Dr Gulbrandsen's work he points to the decade of the 1960s as being the beginning of a new era in the world economy, due to changes which occurred in 'specialization' and 'integration' which, in his view, are characterized as basic elements of modern industrial economy.

As he himself says, 'specialization' in the past took place in a horizontal direction, the production of homogeneous goods being concentrated in those countries in which natural conditions seemed most adequate; since the decades of the 1950s and 1960s, specialization has been in a vertical direction, by the carrying out of various phases of the productive process

and by the production of goods which are not intrinsically homogeneous, but discriminated principally by quality.

In the same way, the 'integration' which previously was effected basically by the 'colonial' system of interchange in which the nations which were producers of manufactured goods traded with nations which produced foodstuffs and raw materials, has also suffered great changes. It is now becoming dominated by the interests of those countries grouped in 'common markets' and by the large multinational organizations.

According to Dr Gulbrandsen, these changes in the forms of specialization and integration have brought big advantages to the world economy; they favoured the transfer of production (or of phases of production) of industrial goods to countries which offered better cost conditions; they permitted large-scale production and access to large markets, with appreciable reductions in costs, by making use of the economies of scale existent in the production and commercialization of these goods; they expanded the commercial interchange between already developed countries, principally of industrial products, thus diminishing the importance of the old colonial system of commerce; and also permitted those countries in process of development appreciably to increase their exports of industrial products.

Dr Gulbrandsen recognizes that these changes brought some difficulties to economists—for example in respect of being able adequately to interpret data referring to international commerce and financial statistics and, also, of formulating a fiscal and financial policy adequate for the countries participating in such commerce, and for these difficulties economic theory has not yet supplied secure guidance.

Continuing, the author asks about the situation of agriculture in this context, and answers by saying that it has not taken advantage of these changes, and, therefore, has not grown adequately. On analysing the position of agriculture, he set out considerations which we deem of the greatest importance but terminates by pointing out, as the principal factor for this conduct of agriculture, the protectionism adopted by developed countries, which restricts the possibility of greater vertical specialization, thus impeding international increase in production and commerce of its products.

The intellectual formulation of Dr Gulbrandsen's thesis is of interest to those learned in economic development. Some doubts, however, may arise for example whether the elements indicated by him are, in fact, the most pertinent for explaining 'the beginning of a new era in world economy' or even the changes which occurred in international production and commerce, whether other elements should not also be indicated, as for example the important technological innovations in production and transport, and also ideological changes operating in the international scene, which not only permitted but also forced changes in specialization and integration to which Dr Gulbrandsen refers.

Another doubt which we could also raise is in respect to Dr Gulbrandsen's affirmation that the protectionism of developed countries

impedes specialization and integration in the agricultural sector and, consequently, increases in international production and commerce in the sector.

We consider that the increase in international production and commerce in agricultural products depends on more complex elements. Furthermore, we believe that even by eliminating the various forms of protectionism which limit international commerce, the increases in production and trade which would be obtained would be far from bringing an adequate and generalized improvement to producing countries in general. Without a doubt, it would bring an increase in production and income to some few countries which find themselves in a position to enlarge their production and exports, principally such developed countries as the United States, Canada and Australia, or to those in a satisfactory phase of development, such as Brazil; but the large majority of countries would be little benefited by such changes.

This affirmation on our part is based on a series of elements which we give below in a very succinct form, inasmuch as a detailed discussion of them is found in our recent articles (1) and in our book (2) which were presented at this Congress.

It is known that there is a flagrant lack of proportion between the tremendous increase in the agricultural production capacity (due to technological innovations of mechanical, chemical and biological character) and a relatively small growth in the demand for agricultural products, due to the low elasticity of income and price of these products, and to their continued substitution by synthetic products (fibres, leather, sugar, etc.). Furthermore, the demand for agricultural products naturally increases less than the demand for products and services in the non-agricultural sector, inasmuch as, once the individual is fed, he restricts his demands for agricultural products but not others, thanks to man's imagination in creating new products and stimulating the demand for them. In this way, in a closed economy the active population of the agricultural sector is obliged to diminish and that of the non-agricultural sector to increase in order that they may meet the demands of their respective products. It is admitted today that the active population of the agricultural sector should fall from high levels (70 to 80 per cent of the total population) to 4 to 5 per cent according to the use made by the sector of already known technological innovations. It is because of this that economists refer to the factor in terms of 'law of decrease in relative importance of agriculture', or of 'secular decline of agriculture'.

It is known that modern techniques are only adopted by agriculturists when they are shown to be economically more advantageous than the traditional methods, and that this advantage depends basically on the relationships between prices and productivity of modern and traditional factors used by them, there being occasions (and regions) in which the traditional are shown to be economically more advantageous to the agriculturist than modern methods.

In our articles we have shown that amongst the greatest number of agriculturists, the modern expansion process, which permits the transfer of workers from the agricultural sector to the non-agricultural one, brings with it an element of built-in control, inasmuch as the non-incentive to use modern techniques is created by the expansion of modernization itself, which expansion brings an increase in production and consequently a decrease in prices of products, as also in prices of the traditional factors of land and labour thus reducing or even eliminating the economic advantage of the modern process over the traditional.

Thus it can be said that the degree of modernization, in the sense of the percentage of agriculturists who adopt modern technical methods, reflects the percentages of the population active in the agricultural and non-agricultural sectors. It can also be said that the technological dualism in agriculture, that is to say, the existence of modern and traditional agriculturists, is a fact which should be faced as an apprenticeship to development and not as a lack of an efficient educational service and technical and financial assistance. The areas of traditional agriculture in countries under development can only be eliminated when, coupled with efficient technical assistance and financial services, there is also a larger transfer of agriculturists to the non-agricultural sector.

In a similar way, this is a problem in international commerce. The number of countries which desire to export their agricultural products and whose economy depends on this sector—countries in which a large percentage of the population is found in this sector—is much greater than those countries which in contrast have their economy based on the non-agricultural sector and for this reason have to import foodstuffs and agricultural raw materials. Not only is the number of countries which are 'potential' exporters of agricultural products greater than that of importers, so also the sum of rural populations of the two classes of countries is much greater than the total for the non-agricultural sector. Thus there exists in the world economy the same disparity between percentages of the population in rural and non-rural sectors which was pointed out as being a factor impeding modern expansion in countries under development.

This disparity also limits the growth in the volume agricultural products produced and exported inasmuch as there is a lack of aconsumer market with effective capacity to absorb the 'potential' volume.

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Harry C. Trelogan, U.S.A.

I would like to ask Dr Gulbrandsen whether he expects multinational regulation to be applied to multinational corporations.

J. P. Bhattacharjee, *FAO/ India*

The main thrust of Dr Gulbrandsen's paper is analysis of the world food and agricultural situation in the context of the growing forces for vertical specialization, economic integration at the micro and macro levels and the emergent world market inflation. I find this framework interesting and his analysis keen and perceptive, but wish his coverage of developments in the food and agricultural sector had been more extensive, specially in respect of production and supply, if not of trade.

The present supply and trade situation, and Dr Gulbrandsen has hardly considered this, has thrown into sharp focus the need for not only national but also international adjustments in production both in developed and developing countries. The compartmentalization that has characterized discussions of grains and livestock until recently is now beginning to look unreal. Weather apart, it now appears that the growing affluence in developed countries with its concommitant acceleration of demand growth for livestock will, at least for some years to come, result in a relative shortage even of cereals. On the other hand, the slowing down of the 'Green Revolution' in developing countries is a cause for concern for the future. Thus the perspective has changed. While it is true that the unused production capacity in the North American countries can be switched back, whether and how far this will actually be done remains to be seen. Given this situation, the developing countries will need to give even greater attention to the growth of their food and agricultural production, for reasons additional to those erstwhile considered, if they are to avoid serious supply shortages.

Specially relevant in this context are the level of grain stocks in the world and the attitude towards stock-holding in the major exporting countries. As is known, the present grain stock level in the world is the lowest during the last two decades or more and, even with liberal policies for production and stock-holding and normal weather, will take more than a couple of years to build up to higher levels in the developed exporting countries. But will this be done? We are told that the North American countries are unlikely to revert to their earlier role of holders of surplus stock for the rest of the world. How then are future crises to be avoided? It is this uncertainty and indeterminateness that has prompted the Director General of FAO to propose a scheme for 'minimum world food security' to the member governments who will meet to consider this at the FAO Conference in November this year. Some sort of inter-governmental if not

international arrangement, at least for early warning and consultation, appears highly desirable and timely.

Dr Gulbrandsen has given greater attention to the trade side of the world picture. In spite of the relatively slow growth of world food trade and the comparatively slowest expansion rate of developing country exports in the past, the case for acceleration should not be lightly set aside. An important factor, relevant in this connection but not mentioned in the paper, is the shortfall in the aid (official development assistance) targets of the Second UN Development Decade. This shortfall currently runs at a rate of about U.S. $5–6 billion and in this context the importance of trade as a mechanism of net resource transfer from developed to developing countries has increased enormously. Indeed, the future course and rate of growth of LDCs will be significantly influenced by the extent to which their export earnings could be increased. Since agricultural exports dominate this picture, whatever acceleration of their past growth rates can be achieved would be in the interests not only of these countries but also of the world community. The question is how best this can be done and how much of market access can be assured to LDCs so that the latter can plan reasonably effectively the investments, etc., necessary for the requisite supply increase. Commodity agreements have proved difficult to negotiate and even to implement. Under the circumstances, only an international approach to agricultural adjustment involving among other things, a voluntary curbing of self-sufficiency ratios by the developed in favour of imports from developing countries appears as the logical solution. Proposals for such a scheme are coming up at the FAO Conference in November and the results of these discussions will be awaited with considerable interest.

Dr Gulbrandsen has talked of the 1960s as the turning point of a new era. I cannot agree more with him. Apart from what he has said and what I have added regarding the features of the new era, another point I would like to add, perhaps more in hope, namely, increased international co-operation and co-ordination in the field of production, trade and aid, perhaps through a different but larger role of international institutions. It is through these that the emerging problems can be solved, including the problems presented by the growth and ramifications of the activities of multinational corporations.

S. R. Bose, *Bangladesh*

When discussing the consequences of protectionism in international trade by the developed countries of the world it is my impression that to draw general conclusions for all developed and underdeveloped countries would be fatally wrong. Because when international trade in agricultural products is subject to protection by the developed countries then developing countries where natural resource endowments per head of population are more favourable may be very adversely affected. Latin

America is a typical example. But for most countries of Asia, which are very densely populated with a miserably low man–land ratio, protectionism in agriculture in developed countries is not of much effect. The problem should be analysed so as to see the consequences for different groups of developing countries. These problems are naturally reflected in the discussions in UNCTAD and other international agencies where different groups of underdeveloped countries, because of their differences in natural economic conditions, view the problems differently. For the majority of the underdeveloped countries of the Asian group, I think that protection applied to manufactured goods will affect them more adversely than protectionism applied to agricultural goods. Take, for instance, countries in the Indian sub-continent, whether India, Bangladesh or Pakistan. In spite of modern technology and a Green Revolution, I cannot envisage these countries being in a position of massive exportation of food and fibres even if the developed countries are very liberal in the trade policies regarding agricultural products. Therefore, I think, that more liberal food import policies by developed countries will not help to eliminate poverty. So it is essential that the developed countries liberalize their trade policies relating to manufactured goods. In talking about the main streams of the world economy, the author, perhaps due to shortage of time, did not mention these aspects.

For the underdeveloped countries an international transfer of technology, from the developed areas, is of essential importance. I shall be very grateful if any speaker will specify what technology should be transferred from developed to developing countries and the terms and conditions on which the transfer should be made. Unless hindrances to a quick transfer of manufacturing technology are removed, I do not think that just export orientated growth in agriculture will bring about an era of prosperity in these densely populated underdeveloped countries, particularly in Asia.

Dr Gulbrandsen (in reply)

Dr Paiva refers to the difference in demand growth between agricultural and industrial products. It is true that the demand growth in agricultural products is very slow, but that was not my point. What I meant to stress was that in relation to the demand growth, the development of international trade is slow.

As to the law of protection, I have had the advantage of having made studies, with my colleagues in FAO, on the effects of removing protection, which means that the gains could be of the order of $10 billion, and if you compare this with the actual trade, it would represent almost 60 per cent of the present exports from developing countries. This is due to the fact that the developing countries would gain both in volume and in price. The price increase according to this calculation would be about 30 per cent and the rest would result from volume increase.

If the developing countries do not get the technological support to increase their production, they will not realize the possibility of better access to the developed markets once protection is removed.

I would also draw attention to the fact that removal of protection will encourage trade not only in the primary products themselves but also in different qualities and in processed forms. These could be produced not only in developed countries, but in any country in the world. Of course, if you remove protection, it will not solve the whole poverty problems of the developing countries. The main means for developing countries to overcome poverty is industrialization. And this could be accelerated very considerably by getting access for the agricultural products, because the two sides have to be raised simultaneously.

In answer to Dr Trelogan, when you have broken down the existing rigidities, and are in a new situation, then there will be efforts to introduce new rigidities, and I am sure that international regulations of multinational firms will come, though I hope that it will take a long time.

I leave questions of transfer of technology to Dr Ruttan.