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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

FOOD AND RAW MATERIALS

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P. N. Rosenstein-Rodan
Economic Department
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Introduction

In the District Bank Review for September, 1951, Professor W. Arthur Lewis draws some far-reaching and important conclusions from trends obtaining in food and raw material supplies. A summary 1/ of this article and comment on it are given in what follows.

I. Summary

The shortage of food and raw materials is one of the most serious problems the world and particularly the British economy have to face, and one about which we are, as yet, doing relatively little.

In seeking explanations of the world shortage of primary products, we must beware of the pitfall of attributing it to abnormal demand. The demand for primary products has not grown more rapidly in recent years than was its wont; the contrary is the case. The best measure of world demand for primary products is the index of world manufacturing production. In the forty years before the First World War this grew at an annual rate of 3.7% and, according to Carl Snyder's calculation, world primary production grew at nearly the same rate. But from 1913 to 1950, the annual rate of growth of world manufacturing was only 2.5% 2/. The demand for primary products has not accelerated, it has slackened.

It is equally erroneous to attribute the shortage to abnormal U.S. demand. Here again there has not been acceleration but deceleration. The real income of the U.S. between the 1870's and the 1920's increased by 4.1% per annum; but between 1929 and 1950 it increased only by 2.7% per annum. The growth of U.S. manufacturing production has also slowed down: from 1873 to 1913 it was 4.8% per annum, from 1913 to 1929 it was 3.8% per annum, and from 1929 to 1950 it was only 3.1% per annum. 3/ Even when stockpiling is taken

1/ A summary of the article was given in the Federal Reserve Board Weekly Review of Periodicals, No. 1357.

2/ The choice of years here is arbitrary; 1913, 1929 and 1950 were exceptionally favorable years with a rate of growth of manufacturing output well above any five to ten years average.

3/ The period from 1929 to 1950 consists of two completely different parts: from 1929 to 1939 the rate of increase of U.S. manufacturing production has been 0%, from 1939 to 1950 it has been 6.1%.
into account, American demand is not abnormal when compared with the rate at which demand used to grow, without putting a strain on supplies.

Indeed, our real complaint against the United States is not that she takes too much primary produce from the world, but that she takes too little. The dollar shortage can only be eliminated if the United States will import large quantities of primary produce. And her propensity to import is too low. Out of every hundred dollars by which her national income grows, she spends less than two dollars on additional imports. Quite a small increase in this proportion would end all thoughts of dollar shortage. But for this to be feasible, the rest of the world must produce relatively more primary products and the United States relatively less.

The world shortage is due not to abnormal demand, but to the progressive failure of supply.

In the forty years before 1913, world manufacturing and world primary production grew at nearly the same rates. Since then they have steadily diverged. On the basis 1913 = 100, manufacturing production had reached 247 in 1950 while primary production stood at 155. The annual rate of growth of primary production has fallen from over 3% before 1913, to 1.2% since that date. It is only half as great as the annual growth of manufacturing production. The really acute problem is that presented by agriculture, both on the side of food production, and on the side of raw materials. World agricultural production increased annually by 1.1% between 1913 and 1929; by 1.3% between 1929 and 1937; and by 0.3% between 1937 and 1950. These rates are much too low for a world whose population is expected to grow at a rate of 1.25% over the next decade.

Within two or three decades, as a result of further improvement in public health services, the world's population may even be increasing by as much as 2% per annum. This sets our target. If we can increase yields per acre by 2% per annum in the second half of the century we are safe; if not we are lost.

The best way -- perhaps the only way -- to reduce the rate of growth of population is to increase production even faster. As the standard of living rises, the birth rate falls. Hence the solution of all the problems is to increase agricultural output by two to three per cent per annum. Such an increase is perfectly feasible, on the technical side, if only we can cope with the social obstacles. The gap between good agricultural methods and the methods used by most farmers, especially in Asia, in Africa and in Latin America, is so great that it would not be difficult to increase the productivity of these continents by 3% per annum over the next twenty-five years.

The social obstacles, which are grave, include the provision of capital. Large international investment of capital, together with a large international migration, supported the rapid growth of agricultural production after 1870.
Both these supports have now virtually disappeared. The creditor countries not only did not lend in the 'thirties; they also withdrew substantial sums of capital from the rest of the world.

International investment cannot revive on the old basis.

In consequence, if there is to be any large flow of international loans, it must be inter-governmental. The private investor will lend to his Government, or to an international agency such as the International Bank, which in turn lends to the Government of the capital importing country. And this Government either invests the money itself, or relends it through special development institutions, farmers, manufacturers, and the other entrepreneurs.

This new pattern of international lending whether or not it is as good as the old pattern is capable of doing the job. Indeed, given the importance of increasing the yield of peasant agriculture, it is clearly the only feasible pattern, since the private investor cannot lend directly to small farmers in distant countries.

The advance guards in this development are the United States Export-Import Bank and the International Bank for Reconstruction and Development, each of which expects to lend about $250 million a year to the underdeveloped countries. When these two Banks are asked why they lend so little when so much is needed, they make the same reply: "that underdeveloped countries can only absorb very little capital at the time." By this they mean mainly that underdeveloped countries are short of people to plan and execute development projects. Rapid development is not possible without a considerable investment in people, in education and in public health. Investment in roads and in public services is also essential.

The amount of money the two Banks can lend for productive enterprise depends on the amount that Governments are able to spend on "unproductive" public services, which are a necessary background. The Banks could lend more if the Governments could somehow get more from other sources for parallel facilities. British colonial development furnishes an excellent example of this functioning. There are two separate funds for development: an Investment Fund and a Gift Fund. The Colonial Development Corporation invests in productive enterprises, and expects to make a profit, while the Colonial Development and Welfare Fund provides grants-in-aid towards expenditure on education, health, communications, and other public services. The larger the one, the larger the other can be. This is why the United Nations Report on Economic Development recommends that the wealthier countries of the world should institute a system of grants-in-aid (like Marshall aid) to enable the poorer countries to improve their public services. Administration of a world grant-in-aid raises ticklish issues. Such a scheme would have to be administered by an international agency, under strict supervision and with detailed accounting.
For the United States, plans for world development are a luxury to be justified only in political or in humanitarian terms. But for Britain, the position is quite different. Britain lives off manufactured goods and services produced at home, and food and raw materials produced overseas. "We may pour capital and knowledge into improving our metal industries, but if capital and knowledge are not at the same time being poured into the food and raw material industries abroad, our standard of living may nevertheless fall. To say 'we cannot spare capital for overseas investment because we need it all at home' is to talk nonsense, since our standard of living is not more dependent upon home investment than it is upon overseas investment."

This being so, the attitude of successive British Governments to foreign investment over the past twenty years can only be called shortsighted. Present high prices and shortages are its direct consequence, and this will get progressively worse as world population grows relatively to production, unless we take the lead in organizing the flow of skill and of capital into the world overseas."

(Most of the figures used in this article are from League of Nations or United Nations sources. References to the world exclude the U.S.S.R.).

II. Comment

(i) This is a very remarkable article even if we were not to accept the whole argumentation. Professor Lewis may well have the correct perspective on future trends although his historical explanation of trends in the last two decades may give rise to some doubts.

His thesis is that since food and raw material production did not keep pace with the increase in industrial production shortages in the volume of primary products have emerged; the terms of trade for industrial countries and notably for the United Kingdom have deteriorated and are likely to deteriorate further unless a large-scale international investment in food and raw material production in underdeveloped areas will take place. We may readily agree, first, that the terms of trade have moved sharply in favor of primary commodities, and, second, that it is most unlikely that in the next decade or more the terms of trade will recede to the level of say the 1930's. It is more doubtful, however, whether this is necessarily due to a failure in the last two decades of primary production to keep pace with industrial production.

(ii) To examine this problem the use and the respective roles of the terms "primary products," "raw materials," and "food" should be carefully checked. Metal raw materials and fuel, Professor Lewis agrees, have not been short in the past and are not likely to form a gap in future supply. Agricultural raw materials, on the other hand, are said to have been deficient as can be seen from the following indices of production;
The abnormally low index figure for agricultural raw materials in 1950 is largely due to a cotton crop failure in the United States. In general, however, indices of production over several decades cannot show conclusively whether a balance or an unbalance obtains between the respective outputs of manufacturing and raw materials. Technical progress has diminished the raw material content of output as a whole. A larger rate of growth in manufacturing would therefore not require a corresponding rate of growth of raw materials. After the First World War a series of cost-reducing inventions in the field of raw materials prepared the way to terms of trade which were unfavorable to raw materials in the 1930's. In the 'thirties, food and agricultural raw material production continued to increase in spite of low prices. The indices give, in fact, evidence of a relative over-supply. It does not seem that similar cost-reducing inventions in the production of raw materials have been as widespread after the Second World War. But technical progress took the form of more and more frequent substitutes in the field of raw materials, such as aluminum for copper, staple fibers, rayon, nylon, etc. for cotton and wool, synthetic rubber, plastics, etc. While the exceptional growth of manufacturing output in 1950 (plus 13%) created momentarily a genuine shortage of raw materials, it is not possible to detect the same phenomenon in longer-run trends obtaining between 1929 and 1949. In other words, no failure to expand manufacturing output due to physical shortage of raw materials can be demonstrated. The relevant figures on agricultural raw materials (fibers and rubber) are as follows:

Agricultural Raw Materials in Billion of Units

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<thead>
<tr>
<th></th>
<th>Prewar</th>
<th>1948/49</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>12.5</td>
<td>12.9</td>
</tr>
<tr>
<td>Canada, U.S.A., Australia, Argentine, New Zealand</td>
<td>5.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Rest of world</td>
<td>6.6</td>
<td>7.2</td>
</tr>
<tr>
<td>India/Pakistan</td>
<td>1.6</td>
<td>1.1</td>
</tr>
<tr>
<td>All other countries</td>
<td>5.0</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Here it is evident that the big cotton, jute and wool-producing areas have not increased these crops, but the rest of the world has done admirably. It cannot be said that the five big exporters do not have the capacity to expand fibers; only India was forced to cut fiber production for food; in the other countries, it was a question of relative advantage. In any case, it must be
emphasized that agricultural raw materials take less than 10% of total agricultural production and substitutions in land use are easy, except for wool.

The real cause for anxiety is in fact food production. In this respect, the FAO Index Numbers show the following situation:

<table>
<thead>
<tr>
<th></th>
<th>Prewar</th>
<th>1948/49</th>
</tr>
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<tbody>
<tr>
<td>26 war-devastated countries</td>
<td>56.8</td>
<td>50.7</td>
</tr>
<tr>
<td>27 non-war-devastated countries</td>
<td>57.7</td>
<td>69.7</td>
</tr>
<tr>
<td>Total</td>
<td>114.5</td>
<td>120.4</td>
</tr>
<tr>
<td>India alone</td>
<td>9.9</td>
<td>10.0</td>
</tr>
<tr>
<td>26 non-devastated countries minus India</td>
<td>47.8</td>
<td>59.7</td>
</tr>
</tbody>
</table>

The increase from 47.8 to 59.7 may be misleading because it is largely the result of the United States and Canadian increase in production which was a non-recurrent phenomenon in those areas and one which is not likely to occur in the rest of the world. If food production in the future cannot keep pace with the increase in population, there will be a real danger of shortage not only of food but through competition for scarce land also in agricultural raw materials. The real problem is thus a threat of a gradually failing food supply in underdeveloped areas, but this is a wider problem. The solution of it appears by no means impossible if the present rate of increase in population of 1.25% per annum is maintained. But it would become tragically difficult if the rate of increase were to rise to 2%.

(iii) The statistical figures until 1949 do not conclusively show a failure of supply. All they show is a shortage of supply at the previous price. The terms of trade reflect the relatively higher costs of primary production at the present stage in the world economy characterized by the disappearance of the frontier. Any further increase in food production and in a great part of the raw material production must nowadays be obtained mainly by an increase in yield per acre rather than by an increase of the acreage of cultivated land. The occupation of the prairies of the United States, Canada, Australia, and Argentina was a unique historical phenomenon in two respects: first, in terms of availability of uncultivated free land, and, second, in the sense that the bringing into cultivation of this land was a relatively cheap process. Very little irrigation and only the cheaper forms of land clearance and reclamation were required for that purpose. As against that, increase in yields, which is the main source of additional foodstuffs and raw materials to-day, is not only/very slow but also a very expensive process. The additional use of fertilizers and intensive methods of production on the one hand and of irrigation on the other hand requires large amounts of capital both per head of worker employed and per unit of additional product produced. The opportunities for relatively cheap and rapid in-
creases in agricultural production, such as by the use of better seed and insecticides, are relatively limited. The extent to which these methods can be applied is usually very much overrated. So also is the speed at which their progressive adoption can be spread and accelerated. The recent vast technical progress in the agricultures of the United States and Canada seems to be an exception rather than a prototype. It took place in those areas mainly during the last fifteen years and could not be repeated again, even in the United States and Canada; in fact, the margin for further improvement of that type has been estimated to be at best only another 10% in the rich and advanced areas of the world. It is even more significant that these methods cannot be applied in any of the underdeveloped areas. To increase world agricultural output by 50% or more is therefore a tremendous task. Many high authorities in agriculture do not share Professor Lewis' optimism that it would not be difficult to increase productivity in Asia, in Africa and in Latin America by 3% per annum over the next twenty-five years. They expect that an increase of the yield per acre by 1% to 1 1/2% per annum over the next twenty-five years is almost the maximum which is practicable, and that it will not be simple or easy; it will cost a lot of money and good men for research, extension and organization.

We may thus readily agree that better terms of trade for primary products are likely to continue and that this is not due to abnormal demand. It does not necessarily follow, however, that this is due to the progressive failure of supply. The "shortage of supplies" is used in two different senses: first, in the literal meaning of deficiency or shortage, and, secondly, in the sense of shortage of supply at the previous price. As long as uncultivated prairies were taken into cultivation, increasing supplies were forthcoming at more or less constant prices. Once the frontier has completely disappeared, further increases of supply will be forthcoming only at increased prices reflecting increased costs. This will be the case even if a great deal of international investment were to flow into the production of primary goods. The terms of trade would remain unfavorable to industrial countries, and particularly to the United Kingdom, even if the volume of primary production were to grow at the same pace as the volume of industrial production. Admittedly, the terms of trade would be distinctly worse if no international investment in underdeveloped areas were to take place. Under such assumptions, an absolute shortage of primary products might appear.

(iv) Two further comments may be made on Professor Lewis' requests for a United Kingdom policy favoring foreign investment. Historically, there seems to be very little relation between the terms of trade and international investment. During the relatively cheap expansion of agricultural production in the days of the frontier, the terms of trade for the United Kingdom between 1816 and 1880 were constantly deteriorating. While the occupation of the prairies was a relatively cheap process, industrial costs were lowered to an even greater extent so that over seventy years one unit of primary products increased by 70% in purchasing power. This happened in a period of a large volume of international investment during which the largest proportion
of international investment went into railways and transport, besides primary production. From 1880 until 1913, the trend in the terms of trade was reversed. They improved for the United Kingdom. The volume of international investment during that time was again at its maximum. The experience of 1816 to 1880 shows at least that the prospect of terms of trade unfavorable to industrial countries need not in any way be an obstacle to international investment on a large scale.

(v) It is true that the United Kingdom's direct economic interest in world prosperity is even greater than that of the United States. This is simply a reflection of the fact that the United Kingdom depends on imports to the extent of over 20% of its national income while the United States depends on it only to the extent of 3 to 4% of her national income. In fact, however, overseas investment in the sterling area has not been discouraged in the postwar years. Only overseas investment outside the sterling area has been affected by the U.K. policy. Irrespectively of the fundamental question of relative advantages of foreign and domestic investment, the maximum possible supply of the U.K.'s overseas investment could not be sufficient to solve the wider problem of the scarcity of international investment in underdeveloped areas. This problem, which is vital for both economic and social reasons, will have to be solved by all the advanced countries.